1. PROJECT CODE	2. JPIC CODE	AMS-02 TASK SHEET (ATS)
SA-AMS	AMS	

3. TYPE				4. ATS NO.	5. PAGE
A	CONFIGURATION CHANGE		☒	ATS 090127-1-R0	1 OF 116
	PERMANENT	☐ TEMPORARY	☒	6. MOD SHEET(S) NUMBER(S)	
B	NONCONFIGURATION CHANGE		☐		

10. PART NAME	11. Sub Detector Name	12. SERIAL/LOT NO.
AMS02	TRACKER TTCS S BOX	NA

14. APPLICABLE DOCUMENTS

18. ATS TITLE

TTCB Seconday FM installation

20. OPER SEQ. NO.	21. OPERATIONS (Print, Type, or Write Legibly)	VERIFICATION 22. TECH	23. QA/DV
	NOTE CAUTION WARNING **THIS ATS COVERS ALL THE INTEGRATION STEPS NEEDED FOR THE TTCB-FM SECONDARY INSTALLATION** The purpose of this ATS is to specify the TTCB installation of the TTCS boxes, that will be performed at AIDC Taiwan. The Project Engineer: Johannes van Es (TTCS) has the option to reorder steps on site as required. **HANDLING AND HARDWARE INSTALLATION** **Each operation on FM Hardware shall be done wearing gloves and in according to the following instructions** **All the integration activities shall be done by qualified personnel.** **The TTCS Project Engineer has the authority to work the steps in this ATS out of order.**		

24. ORIGINATOR	DATE	25. FINAL ACCEPTANCE STAMP AND DATE
J. van Es		

APPROVALS *(Printed or Typed and Signed)*

26. PROJECT ENGINEER	DATE	27. QUALITY ENGINEER	DATE
J. van Es			
28.		29.	
30.		31.	

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20. OPER SEQ. NO.	21. OPERATIONS (Print, Type, or Write Legibly)	VERIFICATION	
		22. TECH	23. QA/DV

SCOPE

The purpose of the present document is to provide information and guidelines for the installation of the TTCB FM2 components on its support and the installation into the TTCB. The integration sequence are described in

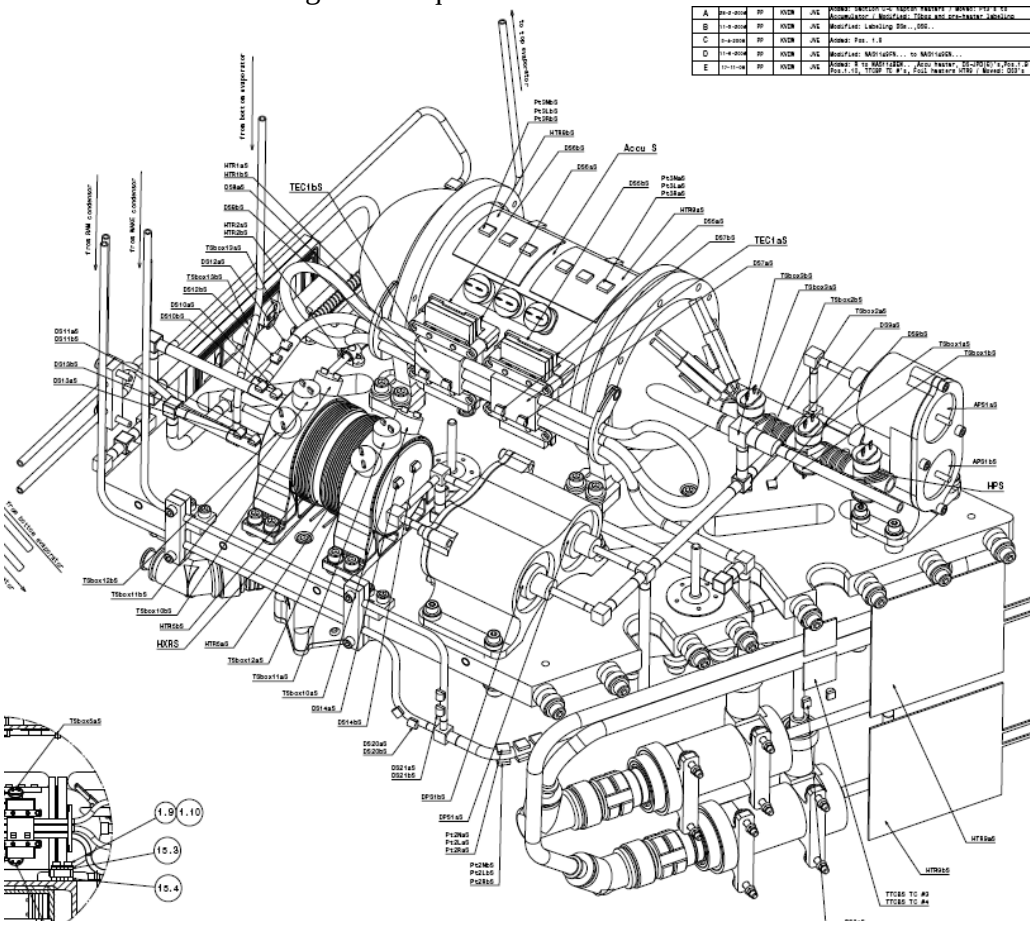

Figure 1

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APPLICABLE DOCUMENTS

The following documents in the latest applicable issue form a part of this plan to the extent specified herein:

AD	Document ID	Issue/Rev	Title
1	AMSTR-NLR-PR-021	6.4	TTCS Box Welding Procedure
2	ET5998-08-01	E/	ASSY TTCB P FM
3	ET6029-05-031	F/	ASSY HX FM S
4	ET6029-05-019	H/	HX FM P CLIP AND SUPPORT
5	ET5998-08-10	D/	TTCB FM Assembly base
6	AMSTR-NLR-PR-062	1.0	TTCB-S Box welding procedure

STANDARD AND SPECIAL TOOLS

For the hardware installation a standard tool shall be used.
Where the use of standard tooling is not possible, special tool may be employed.
Each special tool has to be identified with its Drawing Number marked, in indelible way, on the same tool
All the tools have to be clean and free from dust and grease.
For the present installation only standard tools are needed

RUNNING TORQUE MEASUREMENT

In the present integration activity we have to consider several types of locking as coupling by inserts and few by locking features on the bolts.
This value is an output from Specification MIL-I-45914A see below table.

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MIL-I-45914A

TABLE I. Internal thread self-locking torque (inch-pounds).

Insert Internal Thread Fine or Coarse	Maximum Locking Torque	Minimum Breakaway Torque
.086	2.5	.2
.112	5	.5
.138	10	1.0
.164	15	1.5
.190	18	2.0
.250	30	3.5
.3125	60	6.5
.375	80	9.5
.4375	100	14.0
.500	150	18.0
.5625	200	24.0
.625	300	32.0
.750	400	50.0
.875	600	70.0
1.000	800	90.0

Table 1: Running torque values according to MIL-I-45914A

Since it is a continuous torque it is necessary to measure it with an analogical torque wrench, obtaining the maximum torque applied during this operation.
The Locking Torque value has to be written in the relative box in the Integration Procedure Table and added to the Seating Torque required in the structural analysis, (and reported in the engineering drawings)

FINAL INSTALLATION TORQUE MEASUREMENT

Final Torque to be applied to each screw is the result of the sum of the Locking Torque (measured) and the Seating Torque prescribed from the structural analysis (and reported also on the engineering drawing).
The Seating torques to be applied for each screws are listed in this ATS
The entire torque shall be applied using calibrated torque wrench

TORQUE (T)= SEATING TORQUE (ST) +LOCKING TORQUE (RT)

- SEATING TORQUE (from structural analysis)
- LOCKING (= RUNNING) TORQUE (measured)

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LUBRICATION

All these fasteners shall be installed in LUBRICATED condition (according to the structural analysis)

The below Step by Step procedure, have to be followed for all the fittings to be used for the parts installation.

STEP	OPERATION
1	Clean screws and washers in an Isopropyl Alcohol bath
2	Let the screws and washers dry on a clean towel
3	Perform a screws and washers visual Inspection
4	Install the HX-support assembly with the washers to the TTCB-P base plate
5	Add Koropron primer if indicated
5	Measure the Locking Torque and register the value in the Integration Procedure Tables The Integration Procedure Tables are part of the present document
6	Torque the bolts to the final torque values

1.1 WARNING: for TTCB installation reference drawings are:

ET5998-08-DR-001-E-KW-ASSEMBLY TTCB FM.pdf

ET5998-08-DR-002-D-KW-ASSY COVER.pdf

ET5998-08-DR-003-C-KW-ASSY PLATES.pdf

ET5998-08-DR-004-E-KW-ASSY TUBING.pdf

ET5998-08-DR-005-E-KW-ASSY APS.pdf

ET5998-08-DR-006-E-KW-ASSY DPS.pdf

ET5998-08-DR-010-D-KW-ASSY BASE.pdf

ET5998-08-DR-011-C-KW-SIDE PLATE.pdf

ET5998-08-DR-012-A-KW-PP BOX.pdf

ET5998-08-DR-013-C-KW-CONNECTOR PLATE.pdf

ET5998-08-DR-014-F-KW-APS + DSP SUPPORT.pdf

ET5998-08-DR-015-0-KW-THERMAL WASHERS.pdf

ET5998-08-DR-016-A-KW-BRACKET PP FRONT.pdf

ET5998-08-DR-017-A-KW-BRACKET PP BACK.pdf

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	ET5998-08-DR-018-B-KW-PIPE BRACKET.pdf ET5998-08-DR-019-E-KW-TUBING.pdf ET5998-08-DR-020-D-KW-AUXILIARY TOOL.pdf ET5998-08-DR-021-C-KW-ANGLED PROFILE.pdf ET5998-08-DR-022-C-KW-SPECIAL WELD FITTINGS.pdf ET5998-08-DR-023-A-KW-INTEGRATION START UP RADIATOR.pdf ET5998-12-DR-001-A-KW-ASSY COLD ORBIT HEATER.pdf ET5998-012-DR-004-C-KW-PRE HEATER.pdf Verify before use the availability of the approved drawing revision		

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Open this ATS

2. INSTALLATION OF **PUMP CONTROLLER** ONTO THE TTCB BASE PLATE

2.1 Prepare the TTCS PUMP CONTROLLER for installation. Perform a visual inspection of the parts to be installed; clean the parts to be installed with Isopropyl Alcohol and let the parts to be installed dry on the clean towel

2.2 Prepare screws and washer to be used for the part installation. Perform a screws and washer visual inspection; clean screws and washers in an Isopropyl Alcohol bath and let screws and washers dry on a clean towel

2.3 Perform a visual inspection of the base plate; check the cleanliness of all the inserts. If necessary clean them with Isopropyl Alcohol

2.4 Weight all the hardware to be installed, including fasteners. Record the weight

ITEM	WEIGHT

SCALE

2.5 PN _____ M# _____ Cal Date_____

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20. OPER SEQ. NO.	21. OPERATIONS (Print, Type, or Write Legibly)	VERIFICATION 22. TECH	VERIFICATION 23. QA/DV
2.6	WARNING: TTCB installation reference drawings are as indicated at the start of this ATS. Verify before use the availability of the approved drawing revision		
2.6.1	Check the bill of material in the assembly drawing.		
2.6.2	Only when indicated in drawing apply a thin layer of Koropron primer in between washers and base plate and or component. Koropron primer - PN _____ Lot#_____ Exp. Date _____		
2.6.3	Install the indicated component on the TTCB base plate as shown in the figure below.		

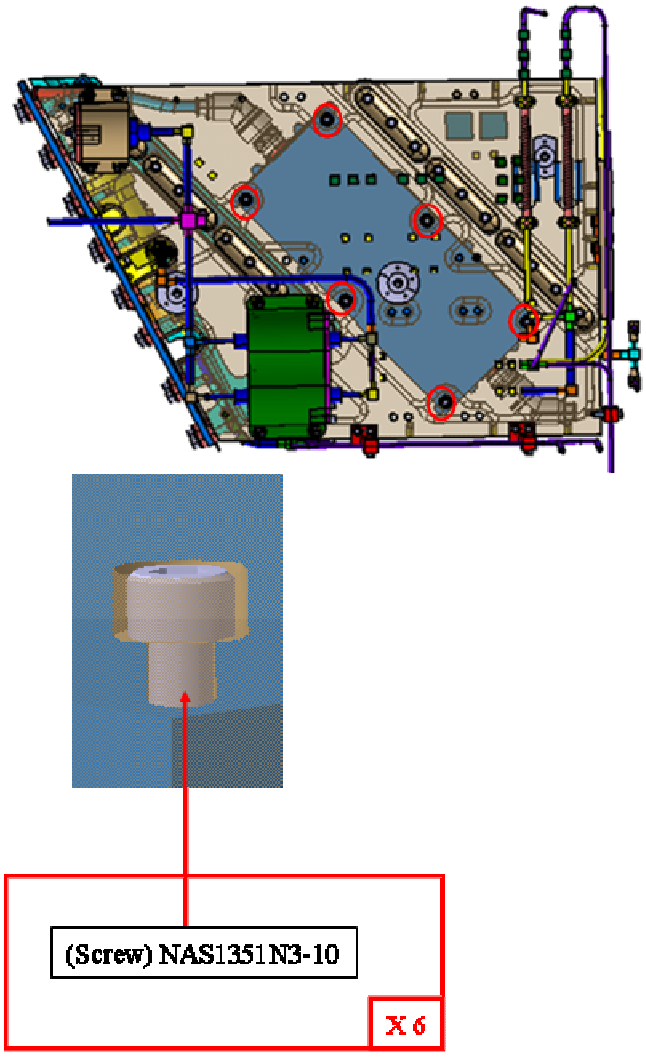

Figure 4: Installation of PUMP CONTROLLER to base plate

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2.6.4 Apply a thin layer of Grease, Braycote 601EF (C1), to the threads of each bolt prior the installation (as reported on the assembly drawings).

Braycote Grease - PN _____ Lot#_____ Exp. Date _____

2.7 Install the fasteners as per figure 4 and record fasteners lot number (write by hand)

Bolt/washer/nut and number NAS number LOT

_____ _____ LOT#_____

_____ _____ LOT#_____

_____ _____ LOT#_____

_____ _____ LOT#_____

_____ _____ LOT#_____

_____ _____ LOT#_____

_____ _____ LOT#_____

_____ _____ LOT#_____

_____ _____ LOT#_____

2.8 Torque the fasteners installed in the former step to the final torque value. Seating torque values are shown in below table.

Dash Number	Torque (in*lbf)	
	Max	Min
Screw NAS1351N3-10	42.237	35.901

2.9 Check this value with the table at the end of this ATS.

Locking torque shall be in between **2– 18 inch*lbf (size 0.190)**.

2.10 Check this value with Table 1 at the start of this ATS.
Final torque shall be the seating torque ABOVE LOCKING TORQUE.
5% precision on torque.

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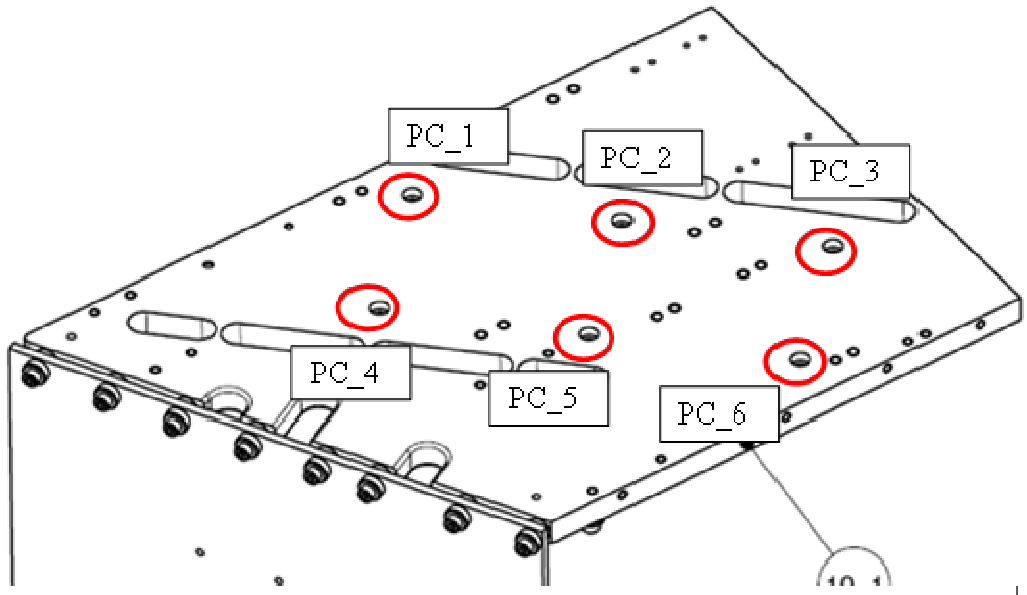

Torque Wrench- Locking Torque (locking is the same as running torque)

PN _____ M# _____ Cal Due Date_____

Torque Wrench- Final Torque

PN _____ M# _____ Cal Due Date_____

Bolt indication (see figure above)	**Locking Torque**	**Final Torque**
_____	_____	_____
_____	_____	_____
_____	_____	_____
_____	_____	_____
_____	_____	_____
_____	_____	_____
_____	_____	_____
_____	_____	_____

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	Bolt indication (see figure above) Locking Torque Final Torque _____ _____ _____ _____ _____ _____ _____ _____ _____ _____ _____ _____		
2.11	**End of online operation Pump Controller box**		

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3. INSTALLATION OF **APS** ONTO THE TTCB BASE PLATE

3.1 Prepare the APS for installation. Perform a visual inspection of the parts to be installed; clean the parts to be installed with Isopropyl Alcohol and let the parts to be installed dry on the clean towel

3.2 Prepare screws and washer to be used for the part installation. Perform a screws and washer visual inspection; clean screws and washers in an Isopropyl Alcohol bath and let screws and washers dry on a clean towel

3.3 Perform a visual inspection of the base plate; check the cleanliness of all the inserts. If necessary clean them with Isopropyl Alcohol

3.4 Weight all the hardware to be installed, including fasteners. Record the weight

ITEM	WEIGHT

SCALE

3.5 PN _____ M# _____ Cal Date_____

3.6 WARNING: TTCB installation reference drawings are as indicated at the start of this ATS.
Verify before use the availability of the approved drawing revision

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3.6.1 Check the bill of material in the assembly drawing.

3.6.2 Only when indicated in drawing apply a thin layer of Koropron primer in between washers and base plate and or component.

Koropron primer - PN _____ Lot#_____ Exp. Date _____

3.6.3 Install the indicated component on the TTCB base plate as shown in the figure below.

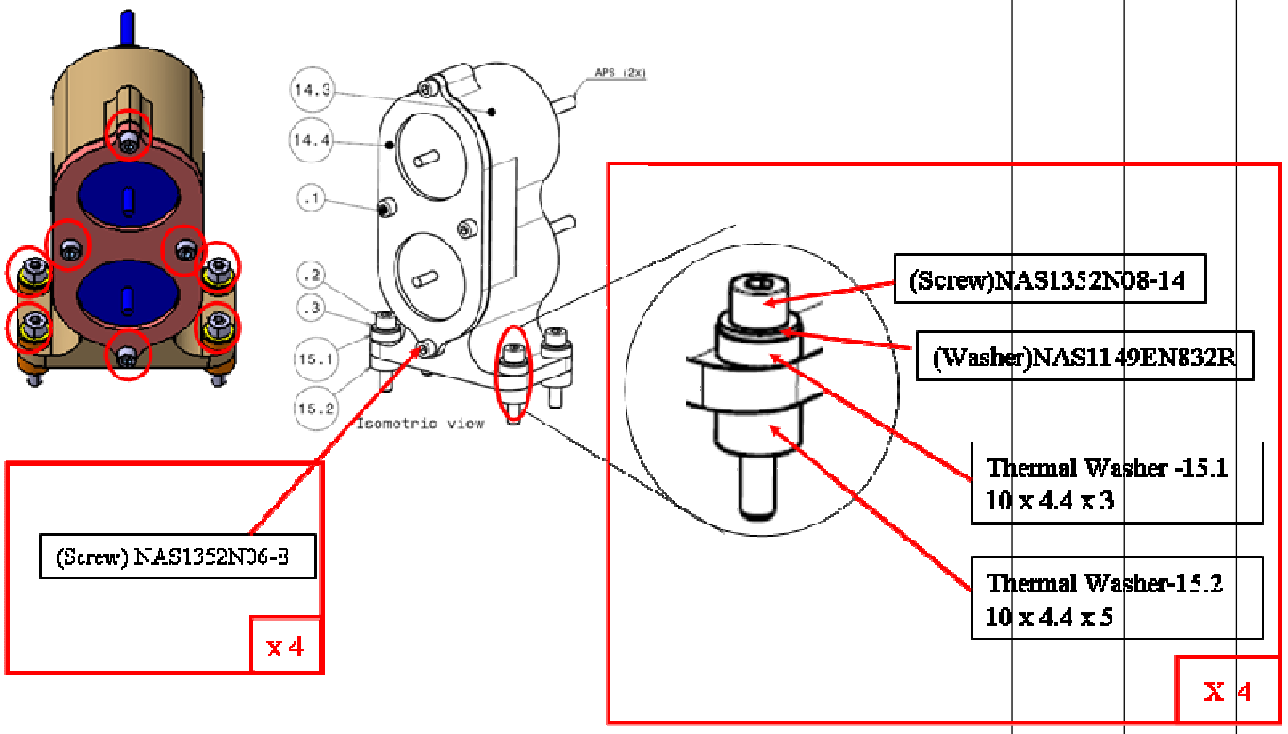

Figure 4: Installation of APS to base plate

3.6.4 Apply a thin layer of Grease, Braycote 601EF (C1), to the threads of each bolt prior the installation (as reported on the assembly drawings).

Braycote Grease - PN _____ Lot#_____ Exp. Date _____

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3.7 Install the fasteners as per figure 4 and record fasteners lot number (write by hand)

Bolt/washer/nut and number NAS number LOT

_____ _____ LOT#_____

_____ _____ LOT#_____

_____ _____ LOT#_____

_____ _____ LOT#_____

_____ _____ LOT#_____

_____ _____ LOT#_____

_____ _____ LOT#_____

_____ _____ LOT#_____

_____ _____ LOT#_____

3.8 Torque the fasteners installed in the former step to the final torque value. Seating torque values are shown in below table.

Dash Number	Torque (in*lbf)	
	Max	Min
Screw NAS1352N06-8	13.861	11.782
Screw NAS1352N08-14	24.944	21.203

3.9 Check this value with the table at the end of this ATS.

Locking torque shall be in **1.0 -10 inch*lbf (size 0.138)** for NAS1352N06-8
Locking torque shall be in **1.5 -15 inch*lbf (size 0.164)** for NAS1352N08-14

3.10 Check this value with Table 1 at the start of this ATS.
Final torque shall be the seating torque ABOVE LOCKING TORQUE.
5% precision on torque.

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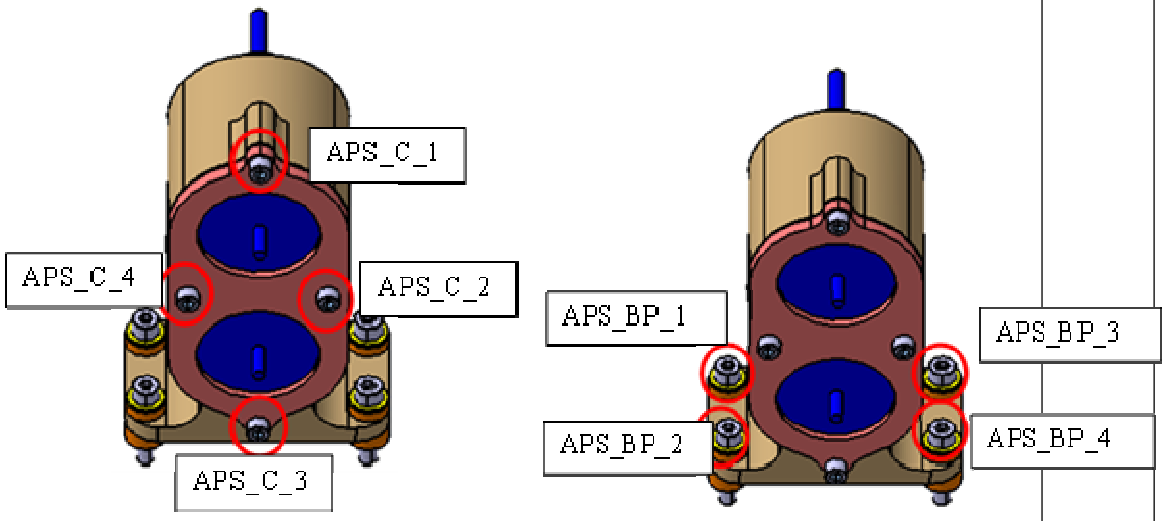

Torque Wrench- Locking Torque (locking is the same as running torque)

PN _____ M# _____ Cal Due Date_____

Torque Wrench- Final Torque

PN _____ M# _____ Cal Due Date_____

Bolt indication (see figure above)	**Locking Torque**	**Final Torque**
_____	_____	_____
_____	_____	_____
_____	_____	_____
_____	_____	_____
_____	_____	_____
_____	_____	_____
_____	_____	_____
_____	_____	_____
_____	_____	_____

3.11 **End of online operation APS to base plate**

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		22. TECH	23. QA/DV

4. INSTALLATION OF **DPS** ONTO THE TTCB BASE PLATE

4.1 Prepare the DPS for installation. Perform a visual inspection of the parts to be installed; clean the parts to be installed with Isopropyl Alcohol and let the parts to be installed dry on the clean towel

4.2 Prepare screws and washer to be used for the part installation. Perform a screws and washer visual inspection; clean screws and washers in an Isopropyl Alcohol bath and let screws and washers dry on a clean towel

4.3 Perform a visual inspection of the base plate; check the cleanliness of all the inserts. If necessary clean them with Isopropyl Alcohol

4.4 Weight all the hardware to be installed, including fasteners. Record the weight

ITEM	WEIGHT

SCALE

4.5 PN _____ M# _____ Cal Date_____

4.6 WARNING: TTCB installation reference drawings are as indicated at the start of this ATS.
Verify before use the availability of the approved drawing revision

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4.6.1 Check the bill of material in the assembly drawing.

4.6.2 Only when indicated in drawing apply a thin layer of Koropron primer in between washers and base plate and or component.

Koropron primer - PN _____ Lot#_____ Exp. Date _____

4.6.3 Install the indicated component on the TTCB base plate as shown in the figure below.

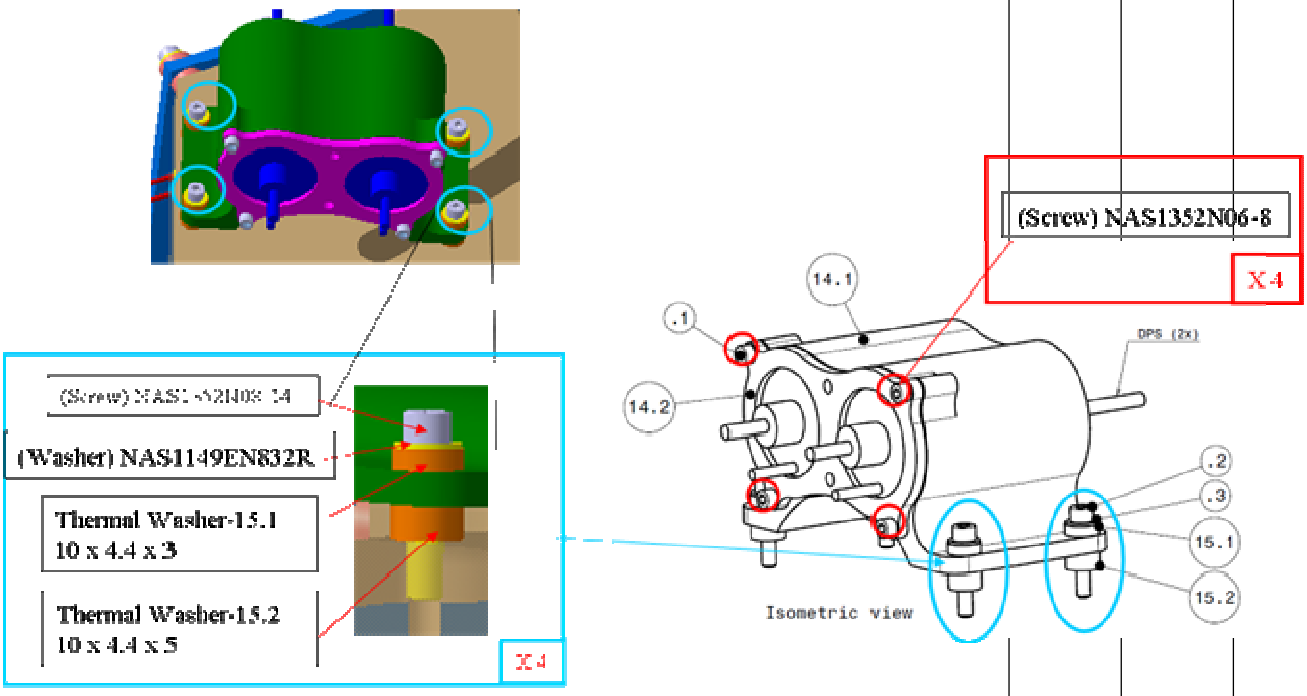

Figure 4: Installation of DPS to base plate

4.6.4 Apply a thin layer of Grease, Braycote 601EF (C1), to the threads of each bolt prior the installation (as reported on the assembly drawings).

Braycote Grease - PN _____ Lot#_____ Exp. Date _____

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4.7 Install the fasteners as per figure 4 and record fasteners lot number (write by hand)

Bolt/washer/nut and number NAS number LOT

_____ _____ LOT#_____

_____ _____ LOT#_____

_____ _____ LOT#_____

_____ _____ LOT#_____

_____ _____ LOT#_____

_____ _____ LOT#_____

_____ _____ LOT#_____

_____ _____ LOT#_____

_____ _____ LOT#_____

4.8 Torque the fasteners installed in the former step to the final torque value. Seating torque values are shown in below table.

Dash Number	Torque (in*lbf)	
	Max	Min
Screw NAS1352N06-8	13.861	11.782
Screw NAS1352N08-14	24.944	21.203

4.9 Check this value with the table at the end of this ATS.

Locking torque shall be in **1.0 -10 inch*lbf (size 0.138)** for NAS1352N06-8
Locking torque shall be in **1.5 -15 inch*lbf (size 0.164)** for NAS1352N08-14

4.10 Check this value with Table 1 at the start of this ATS.
Final torque shall be the seating torque ABOVE LOCKING TORQUE.
5% precision on torque.

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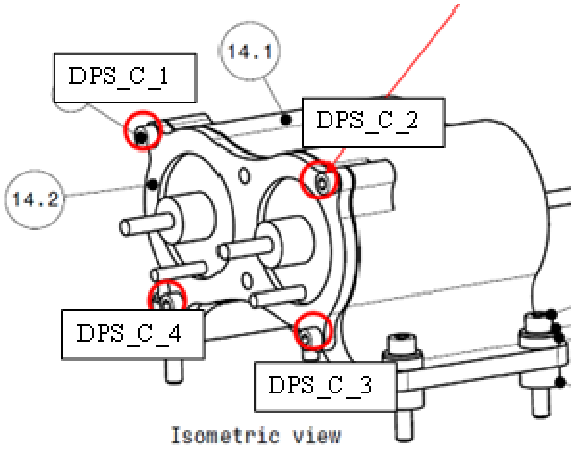

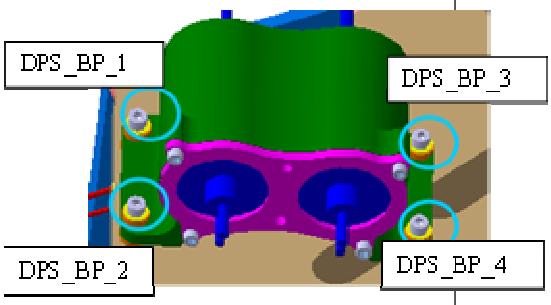

Torque Wrench- Locking Torque (locking is the same as running torque)

PN _____ M# _____ Cal Due Date_____

Torque Wrench- Final Torque

PN _____ M# _____ Cal Due Date_____

Bolt indication (see figure above)	**Locking Torque**	**Final Torque**
_____	_____	_____
_____	_____	_____
_____	_____	_____
_____	_____	_____
_____	_____	_____
_____	_____	_____
_____	_____	_____
_____	_____	_____
_____	_____	_____

4.11 **End of online operation DPS to base plate**

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20. OPER SEQ. NO.	21. OPERATIONS (Print, Type, or Write Legibly)	VERIFICATION 22. TECH	VERIFICATION 23. QA/DV
5.	INSTALLATION OF **PIPE BRACKET TO** TTCB BASE PLATE		
5.1	Prepare the PIPE BRACKET for installation. Perform a visual inspection of the parts to be installed; clean the parts to be installed with Isopropyl Alcohol and let the parts to be installed dry on the clean towel		
5.2	Prepare screws and washer to be used for the part installation. Perform a screws and washer visual inspection; clean screws and washers in an Isopropyl Alcohol bath and let screws and washers dry on a clean towel		
5.3	Perform a visual inspection of the base plate; check the cleanliness of all the inserts. If necessary clean them with Isopropyl Alcohol		
5.4	Weight all the hardware to be installed, including fasteners. Record the weight		

ITEM	WEIGHT

SCALE

5.5 PN _____ M# _____ Cal Date_____

5.6 WARNING: TTCB installation reference drawings are as indicated at the start of this ATS.
Verify before use the availability of the approved drawing revision

5.6.1 Check the bill of material in the assembly drawing.

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5.6.2 Only when indicated in drawing apply a thin layer of Koropron primer in between washers and base plate and or component.

Koropron primer - PN _____ Lot#_____ Exp. Date _____

5.6.3 Install the indicated component on the TTCB base plate as shown in the figure below.

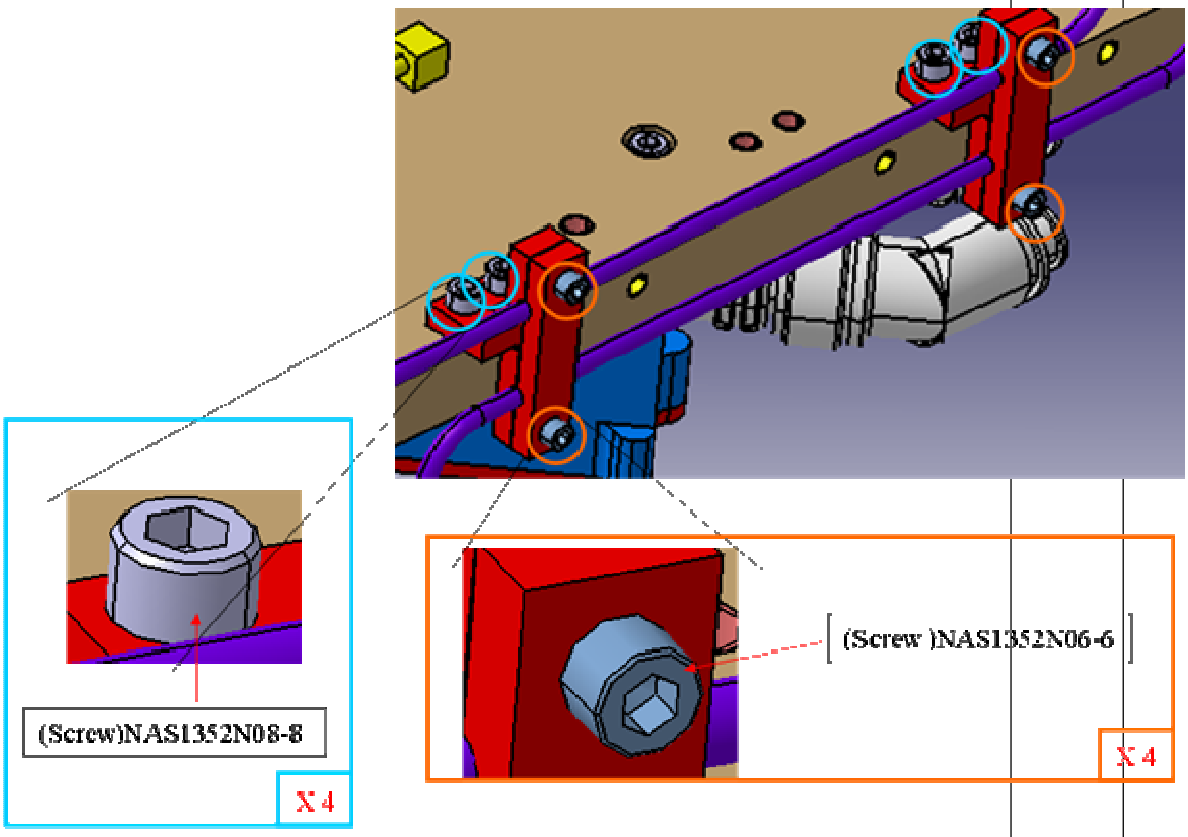

Figure 4: Installation of PIPE BRACKETS to base plate

5.6.4 Apply a thin layer of Grease, Braycote 601EF (C1), to the threads of each bolt prior the installation (as reported on the assembly drawings).

Braycote Grease - PN _____ Lot#_____ Exp. Date _____

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20. OPER SEQ. NO.	21. OPERATIONS (Print, Type, or Write Legibly)	VERIFICATION 22. TECH	23. QA/DV

5.7 Install the fasteners as per figure 4 and record fasteners lot number (write by hand)

Bolt/washer/nut and number NAS number LOT

_____ _____ LOT#_____

_____ _____ LOT#_____

_____ _____ LOT#_____

_____ _____ LOT#_____

_____ _____ LOT#_____

_____ _____ LOT#_____

_____ _____ LOT#_____

_____ _____ LOT#_____

_____ _____ LOT#_____

5.8 Torque the fasteners installed in the former step to the final torque value. Seating torque values are shown in below table.

Dash Number	Torque (in*lbf)	
	Max	Min
Screw NAS1352N08-8	24.944	21.203
Screw NAS1352N06-6	13.861	11.782

5.9 Check this value with the table at the end of this ATS.

Locking torque shall be in **1.5 – 15 inch*lbf (size 0.164)** for NAS1352N08-8
Locking torque shall be in **1.0 -10 inch*lbf (size 0.138)** for NAS1352N06-6

5.10 Check this value with Table 1 at the start of this ATS.
Final torque shall be the seating torque ABOVE LOCKING TORQUE.
5% precision on torque.

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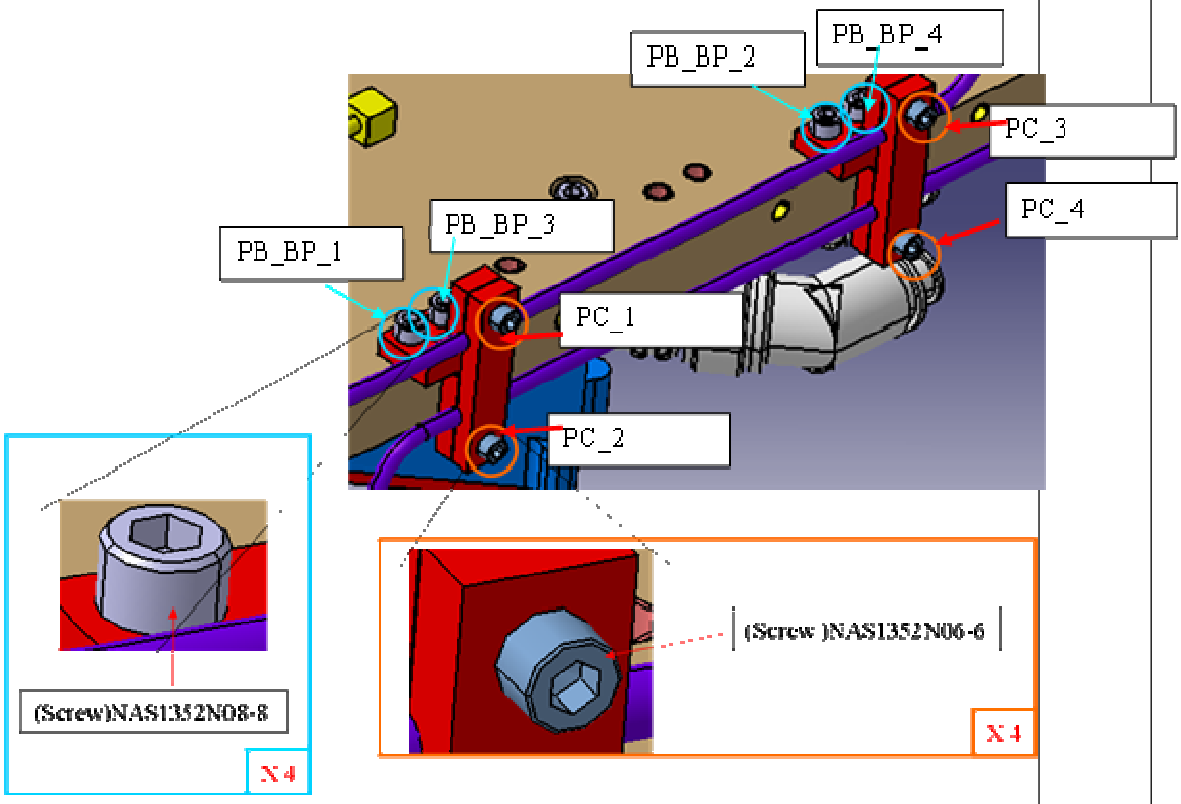
20. OPER SEQ. NO.	21. OPERATIONS (Print, Type, or Write Legibly)	VERIFICATION 22. TECH	23. QA/DV



Torque Wrench- Locking Torque (locking is the same as running torque)

PN _____ M# _____ Cal Due Date_____

Torque Wrench- Final Torque

PN _____ M# _____ Cal Due Date_____

Bolt indication (see figure above)	**Locking Torque**	**Final Torque**
_____	_____	_____
_____	_____	_____
_____	_____	_____
_____	_____	_____
_____	_____	_____
_____	_____	_____

AMS-02 TASK SHEET (ATS) CONTINUATION PAGE	4. ATS NO.	ATS 090127-1-R0
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20. OPER SEQ. NO.	21. OPERATIONS (Print, Type, or Write Legibly)	VERIFICATION 22. TECH	VERIFICATION 23. QA/DV
	Bolt indication (see figure above) Locking Torque Final Torque _____ _____ _____ _____ _____ _____ _____ _____ _____ _____ _____ _____ _____ _____ _____ _____ _____ _____		
5.11	**End of online operation PIPE BRACKET to base plate**		

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20. OPER SEQ. NO.	21. OPERATIONS (Print, Type, or Write Legibly)	VERIFICATION 22. TECH	VERIFICATION 23. QA/DV

6. INSTALLATION OF **PIPE BRACKET TO** TTCB COVER

6.1 Prepare the PIPE BRACKET for installation. Perform a visual inspection of the parts to be installed; clean the parts to be installed with Isopropyl Alcohol and let the parts to be installed dry on the clean towel

6.2 Prepare screws and washer to be used for the part installation. Perform a screws and washer visual inspection; clean screws and washers in an Isopropyl Alcohol bath and let screws and washers dry on a clean towel

6.3 Perform a visual inspection of the COVER; check the cleanliness of all the RIVNUTS. If necessary clean them with Isopropyl Alcohol

6.4 Weight all the hardware to be installed, including fasteners. Record the weight

ITEM	WEIGHT

SCALE

6.5 PN _____ M# _____ Cal Date_____

6.6 WARNING: TTCB installation reference drawings are as indicated at the start of this ATS.
Verify before use the availability of the approved drawing revision

AMS-02 TASK SHEET (ATS) CONTINUATION PAGE	4. ATS NO.	ATS 090127-1-R0
	6. MOD NO.	

20. OPER SEQ. NO.	21. OPERATIONS (Print, Type, or Write Legibly)	VERIFICATION 22. TECH	VERIFICATION 23. QA/DV

6.6.1 Check the bill of material in the assembly drawing.

6.6.2 Only when indicated in drawing apply a thin layer of Koropron primer in between washers and base plate and or component.

Koropron primer - PN _____ Lot#_____ Exp. Date _____

6.6.3 Install the indicated component on the TTCB base plate as shown in the figure below.

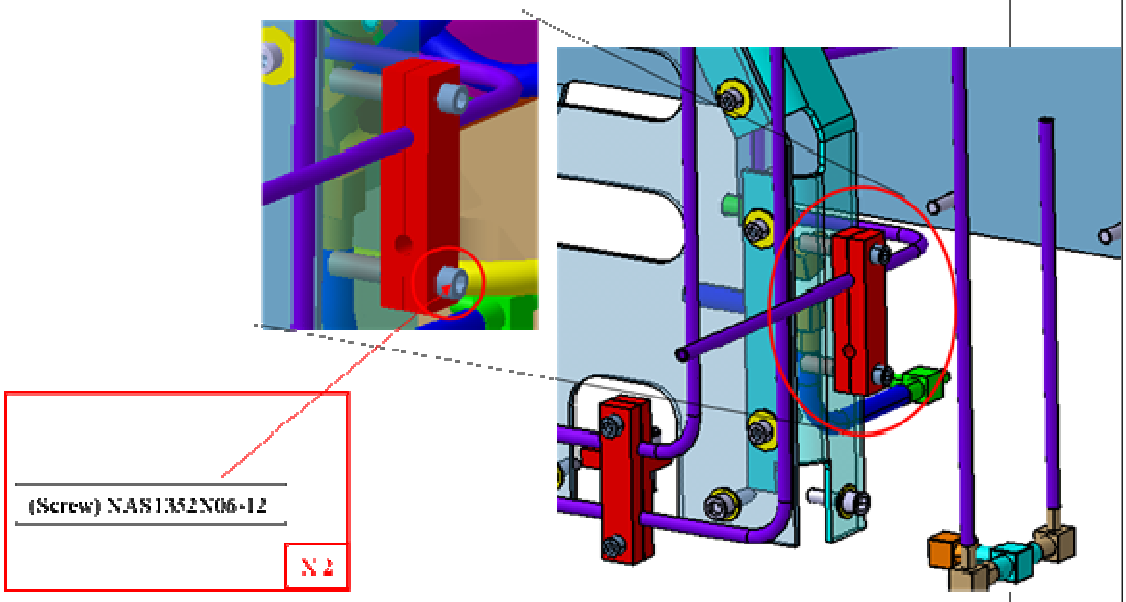

Figure 4: Installation of PIPE BRACKETS to TTCB COVER

6.6.4 Apply a thin layer of Grease, Braycote 601EF (C1), to the threads of each bolt prior the installation (as reported on the assembly drawings).

Braycote Grease - PN _____ Lot#_____ Exp. Date _____

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20. OPER SEQ. NO.	21. OPERATIONS (Print, Type, or Write Legibly)	VERIFICATION 22. TECH	VERIFICATION 23. QA/DV
6.7	Install the fasteners as per figure 4 and record fasteners lot number (write by hand) Bolt/washer/nut and number NAS number LOT _____ _____ LOT#_____ _____ _____ LOT#_____ _____ _____ LOT#_____ _____ _____ LOT#_____ _____ _____ LOT#_____ _____ _____ LOT#_____ _____ _____ LOT#_____ _____ _____ LOT#_____ _____ _____ LOT#_____		
6.8	Torque the fasteners installed in the former step to the final torque value. Seating torque values are shown in below table.		
6.9	Check this value with the table at the end of this ATS. Locking torque shall be in **1.0-10 inch*lbf (size 0.138)**		
6.10	Check this value with Table 1 at the start of this ATS. Final torque shall be the seating torque ABOVE LOCKING TORQUE. 5% precision on torque.		

Dash Number	Torque (in*lbf)	
	Max	Min
Screw NAS1352N06-12	13.861	11.782

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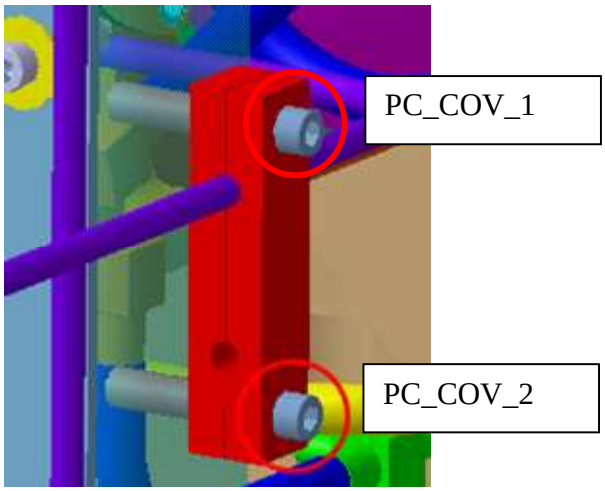
20. OPER SEQ. NO.	21. OPERATIONS (Print, Type, or Write Legibly)	VERIFICATION 22. TECH	VERIFICATION 23. QA/DV



Torque Wrench- Locking Torque (locking is the same as running torque)

PN _____ M# _____ Cal Due Date_____

Torque Wrench- Final Torque

PN _____ M# _____ Cal Due Date_____

Bolt indication (see figure above)	**Locking Torque**	**Final Torque**
_____	_____	_____
_____	_____	_____
_____	_____	_____
_____	_____	_____
_____	_____	_____

6.11 **End of online operation PIPE BRACKET to COVER**

AMS-02 TASK SHEET (ATS) CONTINUATION PAGE	4. ATS NO.	ATS 090127-1-R0
	6. MOD NO.	

20. OPER SEQ. NO.	21. OPERATIONS (Print, Type, or Write Legibly)	VERIFICATION	
		22. TECH	23. QA/DV

7. INSTALLATION OF **ACCU BRACKET TO ACCU COLLAR**

7.1 Prepare the ACCU BRACKET for installation. Perform a visual inspection of the parts to be installed; clean the parts to be installed with Isopropyl Alcohol and let the parts to be installed dry on the clean towel

7.2 Prepare screws and washers to be used for the part installation. Perform a screws and washer visual inspection; clean screws and washers in an Isopropyl Alcohol bath and let screws and washers dry on a clean towel

7.3 Perform a visual inspection of the COLLAR; check the cleanliness of all the THREADED HOLES. If necessary clean them with Isopropyl Alcohol

7.4 Weight all the hardware to be installed, including fasteners. Record the weight

ITEM	WEIGHT

SCALE

7.5 PN _____ M# _____ Cal Date_____

7.6 WARNING: TTCB installation reference drawings are as indicated at the start of this ATS.
Verify before use the availability of the approved drawing revision

AMS-02 TASK SHEET (ATS) CONTINUATION PAGE	4. ATS NO.	ATS 090127-1-R0
	6. MOD NO.	

20. OPER SEQ. NO.	21. OPERATIONS (Print, Type, or Write Legibly)	VERIFICATION 22. TECH	VERIFICATION 23. QA/DV

7.6.1 Check the bill of material in the assembly drawing.

7.6.2 Only when indicated in drawing apply a thin layer of Koropron primer in between washers and base plate and or component.

Koropron primer - PN _____ Lot#_____ Exp. Date _____

7.6.3 Install the indicated component on the TTCB base plate as shown in the figure below.

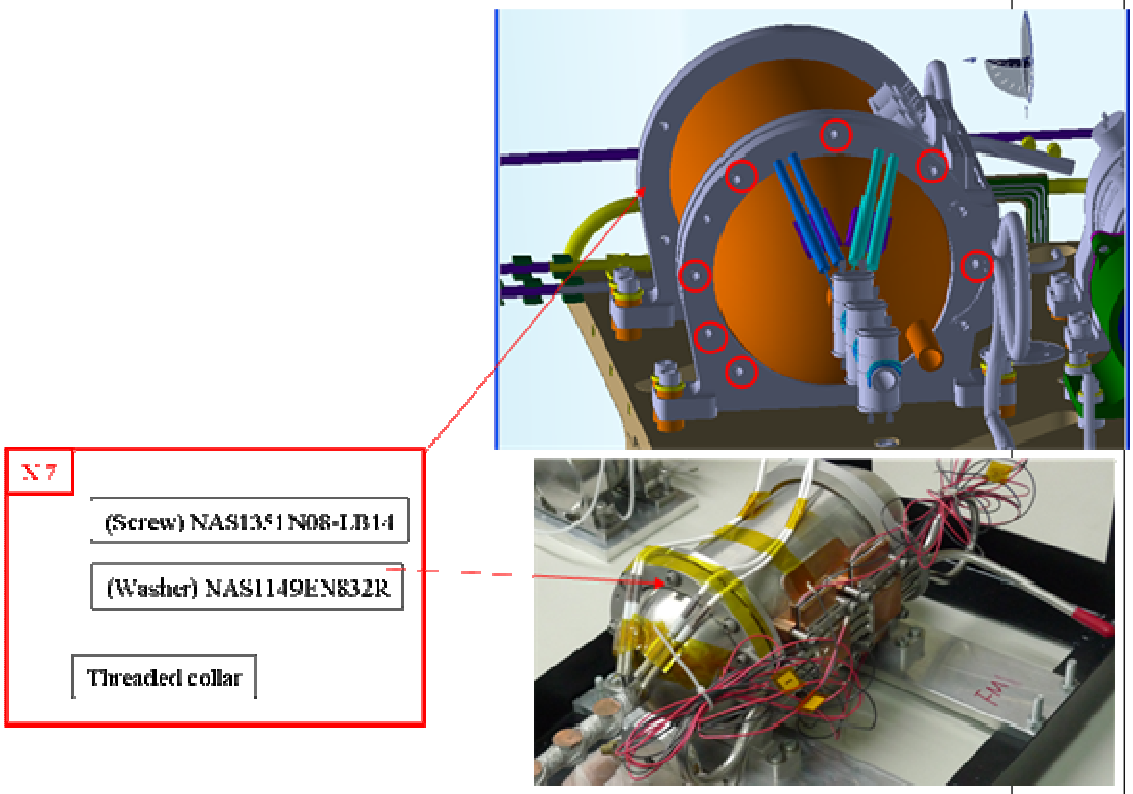


Figure 4: Installation of ACCUMULATOR BRACKET TO ACCU COLLAR

7.6.4 Apply a thin layer of Grease, Braycote 601EF (C1), to the threads of each bolt prior the installation (as reported on the assembly drawings).

Braycote Grease - PN _____ Lot#_____ Exp. Date _____

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20. OPER SEQ. NO.	21. OPERATIONS (Print, Type, or Write Legibly)	VERIFICATION 22. TECH	VERIFICATION 23. QA/DV

7.7 Install the fasteners as per figure 4 and record fasteners lot number (write by hand)

Bolt/washer/nut and number NAS number LOT

_____ _____ LOT#_____

_____ _____ LOT#_____

_____ _____ LOT#_____

_____ _____ LOT#_____

_____ _____ LOT#_____

_____ _____ LOT#_____

_____ _____ LOT#_____

_____ _____ LOT#_____

_____ _____ LOT#_____

7.8 Torque the fasteners installed in the former step to the final torque value. Seating torque values are shown in below table.

Dash Number	Torque (in*lbf)	
	Max	Min
Screw NAS1351N08-LB14	26.863	22.834

7.9 Check this value with the table at the end of this ATS.

Locking torque shall be in **1.5-15 inch*lbf (size 0.164)**
Locking is on the bolt side.

7.10 Check this value with Table 1 at the start of this ATS.
Final torque shall be the seating torque ABOVE LOCKING TORQUE.
5% precision on torque.

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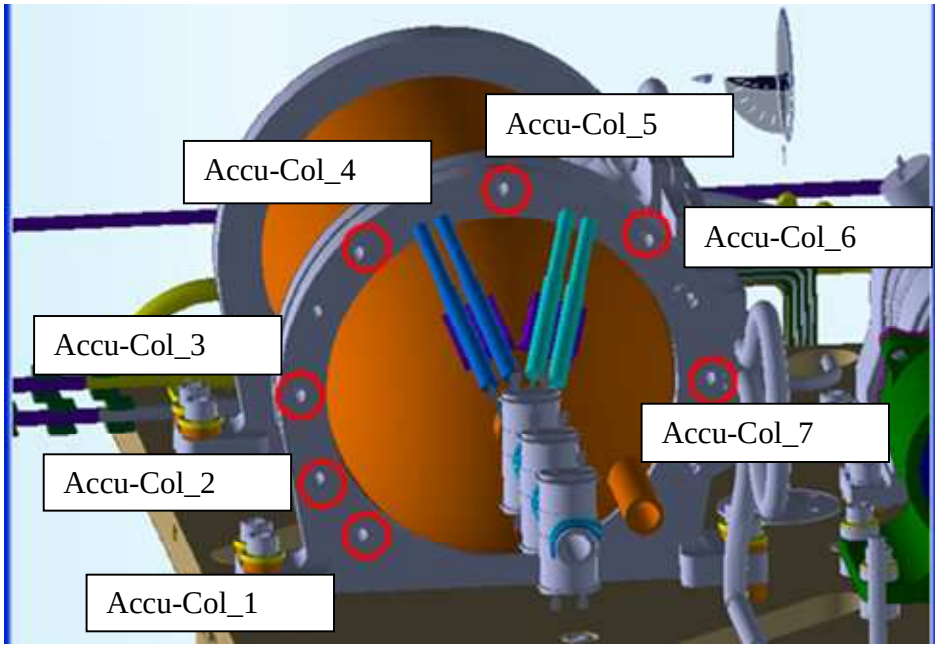
20. OPER SEQ. NO.	21. OPERATIONS (Print, Type, or Write Legibly)	VERIFICATION 22. TECH	VERIFICATION 23. QA/DV



Torque Wrench- Locking Torque (locking is the same as running torque)

PN _____ M# _____ Cal Due Date_____

Torque Wrench- Final Torque

PN _____ M# _____ Cal Due Date_____

Bolt indication (see figure above)	**Locking Torque**	**Final Torque**
_____	_____	_____
_____	_____	_____
_____	_____	_____
_____	_____	_____
_____	_____	_____
_____	_____	_____
_____	_____	_____
_____	_____	_____

7.11 **End of online operation ACCU BRACKET to COLLAR**

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20. OPER SEQ. NO.	21. OPERATIONS (Print, Type, or Write Legibly)	VERIFICATION 22. TECH	23. QA/DV

8. INSTALLATION OF **PIPE CLAMP TO ACCU BRACKETS**

8.1 Prepare the ACCU PIPE CLAMP for installation. Perform a visual inspection of the parts to be installed; clean the parts to be installed with Isopropyl Alcohol and let the parts to be installed dry on the clean towel

8.2 Prepare screws and washers to be used for the part installation. Perform a screws and washer visual inspection; clean screws and washers in an Isopropyl Alcohol bath and let screws and washers dry on a clean towel

8.3 Perform a visual inspection of the ACCU BRACKET; check the cleanliness of all the INSERTS. If necessary clean them with Isopropyl Alcohol

8.4 Weight all the hardware to be installed, including fasteners. Record the weight

ITEM	WEIGHT

SCALE

8.5 PN _____ M# _____ Cal Date_____

8.6 WARNING: TTCB installation reference drawings are as indicated at the start of this ATS.
Verify before use the availability of the approved drawing revision

AMS-02 TASK SHEET (ATS) CONTINUATION PAGE	4. ATS NO.	ATS 090127-1-R0
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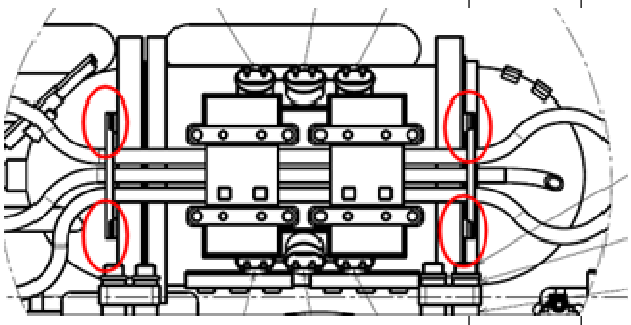
20. OPER SEQ. NO.	21. OPERATIONS (Print, Type, or Write Legibly)	VERIFICATION 22. TECH	VERIFICATION 23. QA/DV

8.6.1 Check the bill of material in the assembly drawing.

8.6.2 Only when indicated in drawing apply a thin layer of Koropron primer in between washers and base plate and or component.

Koropron primer - PN _____ Lot#_____ Exp. Date _____

8.6.3 Install the indicated component on the TTCB base plate as shown in the figure below.



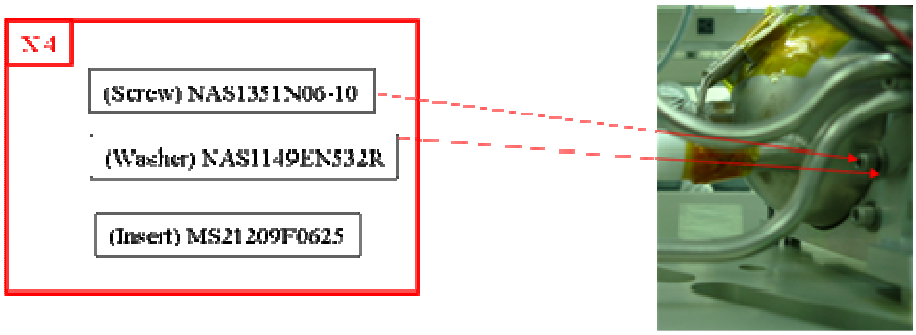


Figure 4: Installation of ACCU PIPE CLAMP TO ACCU BRACKET

8.6.4 Apply a thin layer of Grease, Braycote 601EF (C1), to the threads of each bolt prior the installation (as reported on the assembly drawings).

Braycote Grease - PN _____ Lot#_____ Exp. Date _____

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20. OPER SEQ. NO.	21. OPERATIONS (Print, Type, or Write Legibly)	VERIFICATION 22. TECH	VERIFICATION 23. QA/DV
8.7	Install the fasteners as per figure 4 and record fasteners lot number (write by hand) Bolt/washer/nut and number NAS number LOT _____ _____ LOT#_____ _____ _____ LOT#_____ _____ _____ LOT#_____ _____ _____ LOT#_____ _____ _____ LOT#_____ _____ _____ LOT#_____ _____ _____ LOT#_____ _____ _____ LOT#_____ _____ _____ LOT#_____		
8.8	Torque the fasteners installed in the former step to the final torque value. Seating torque values are shown in below table.		
8.9	Check this value with the table at the end of this ATS. Locking torque shall be in **1-10 inch*lbf (size 0.138)**		
8.10	Check this value with Table 1 at the start of this ATS. Final torque shall be the seating torque ABOVE LOCKING TORQUE. 5% precision on torque.		

Dash Number	Torque (in*lbf)	
	Max	Min
Screw NAS1351N06-10	15.662	13.312

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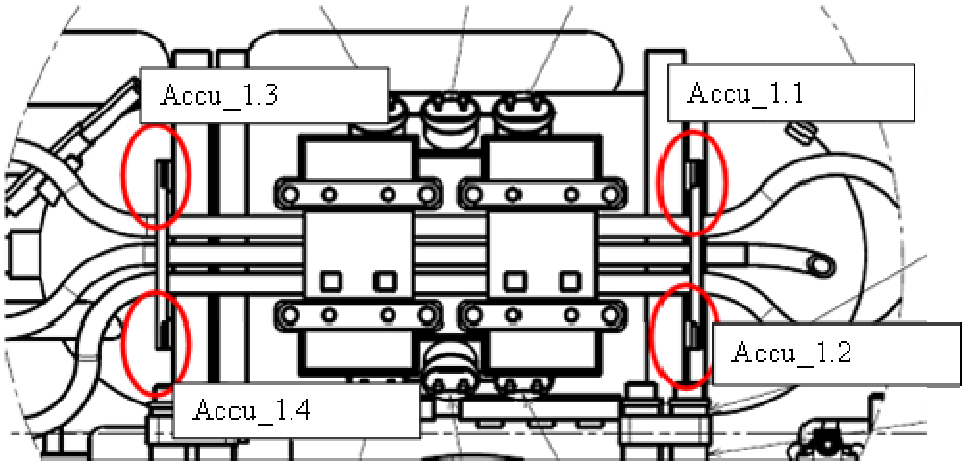
20. OPER SEQ. NO.	21. OPERATIONS (Print, Type, or Write Legibly)	VERIFICATION 22. TECH	VERIFICATION 23. QA/DV



Torque Wrench- Locking Torque (locking is the same as running torque)

PN _____ M# _____ Cal Due Date_____

Torque Wrench- Final Torque

PN _____ M# _____ Cal Due Date_____

Bolt indication (see figure above)	**Locking Torque**	**Final Torque**
_____	_____	_____
_____	_____	_____
_____	_____	_____
_____	_____	_____
_____	_____	_____
_____	_____	_____
_____	_____	_____
_____	_____	_____

8.11 **End of online operation PIPE CLAMP to ACCU BRACKETS**

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20. OPER SEQ. NO.	21. OPERATIONS (Print, Type, or Write Legibly)	VERIFICATION	
		22. TECH	23. QA/DV

9. RETORQUING OF **PELTIER TO ACCU SADDLE**

9.1 Prepare the ACCU PIPE CLAMP for RETORQUING. Perform a visual inspection of the parts to be re-torqued;

9.2 Perform a visual inspection of the ACCU BRACKET; check the cleanliness of all the INSERTS. If necessary clean them with Isopropyl Alcohol

9.3 Weight all the hardware to be installed, including fasteners. Record the weight

ITEM	WEIGHT

SCALE

9.4 PN _____ M# _____ Cal Date_____

9.5 WARNING: TTCB installation reference drawings are as indicated at the start of this ATS.
Verify before use the availability of the approved drawing revision

9.5.1 Check the bill of material in the assembly drawing.

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20. OPER SEQ. NO.	21. OPERATIONS (Print, Type, or Write Legibly)	VERIFICATION 22. TECH	23. QA/DV

9.5.2 Check the indicated components are installed as shown in the figure below.

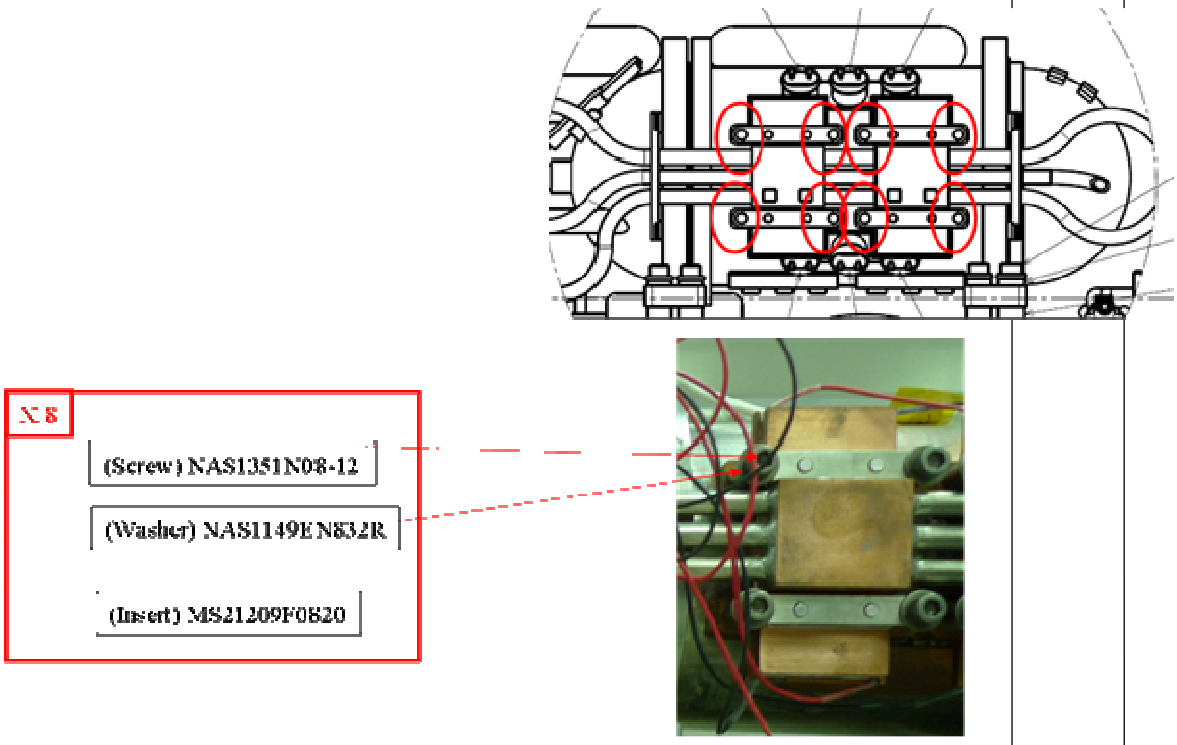

Figure 4: Installation of PELTIER TO ACCU SADDLE

9.5.3 Apply a thin layer of Grease, Braycote 601EF (C1), to the threads of each bolt prior the installation (as reported on the assembly drawings).
CHECK WITH PROJECT ENGINEER HERE

Braycote Grease - PN _____ Lot#_____ Exp. Date _____

9.6 Install the fasteners as per figure 4 and record fasteners lot number (write by hand)

Bolt/washer/nut and number NAS number LOT

_____ _____ LOT#_____

_____ _____ LOT#_____

_____ _____ LOT#_____

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20. OPER SEQ. NO.	21. OPERATIONS (Print, Type, or Write Legibly)	VERIFICATION 22. TECH	23. QA/DV

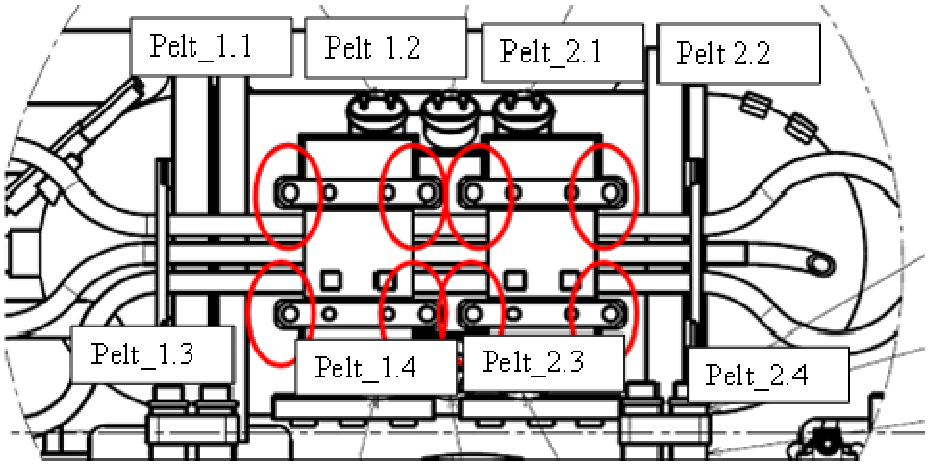
9.7 Torque the fasteners installed in the former step to the final torque value. Seating torque values are shown in below table.

Dash Number	Torque (in*lbf)	
	Max	Min
Screw NAS1351N08-12	26.863	22.834

9.8 Check this value with the table at the end of this ATS.

Locking torque shall be in **1.5-15 inch*lbf (size 0.164)**

9.9 Check this value with Table 1 at the start of this ATS.
Final torque shall be the seating torque ABOVE LOCKING TORQUE.
5% precision on torque.



Torque Wrench- Locking Torque (locking is the same as running torque)

PN _____ M# _____ Cal Due Date_____

Torque Wrench- Final Torque

PN _____ M# _____ Cal Due Date_____

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20. OPER SEQ. NO.	21. OPERATIONS (Print, Type, or Write Legibly)	VERIFICATION 22. TECH	VERIFICATION 23. QA/DV
	Bolt indication (see figure above) Locking Torque Final Torque		
	_____ _____ _____		
	_____ _____ _____		
	_____ _____ _____		
	_____ _____ _____		
	_____ _____ _____		
	_____ _____ _____		
	_____ _____ _____		
	_____ _____ _____		
	_____ _____ _____		
	_____ _____ _____		
9.10	**End of online operation PELTIER to ACCU SADDLE**		

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20. OPER SEQ. NO.	21. OPERATIONS (Print, Type, or Write Legibly)	VERIFICATION 22. TECH	VERIFICATION 23. QA/DV

10. INSTALLATION OF TTCS PRIMARY ACCUMULATOR ONTO THE TTCB PRIMARY BASE PLATE

10.1 Prepare the TTCS Accumulator for installation. Perform a visual inspection of the parts to be installed; clean the parts to be installed with Isopropyl Alcohol and let the parts to be installed dry on the clean towel

10.2 Prepare screws and washer to be used for the part installation. Perform a screws and washer visual inspection; clean screws and washers in an Isopropyl Alcohol bath and let screws and washers dry on a clean towel

10.3 Perform a visual inspection of the base plate; check the cleanliness of all the inserts. If necessary clean them with Isopropyl Alcohol

10.4 Weight all the hardware to be installed, including fasteners. Record the weight

ITEM	WEIGHT

SCALE

10.5 PN _____ M# _____ Cal Date_____

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20. OPER SEQ. NO.	21. OPERATIONS (Print, Type, or Write Legibly)	VERIFICATION 22. TECH	23. QA/DV

10.6 WARNING: for TTCB installation reference drawings are as stated at the start of this ATS.

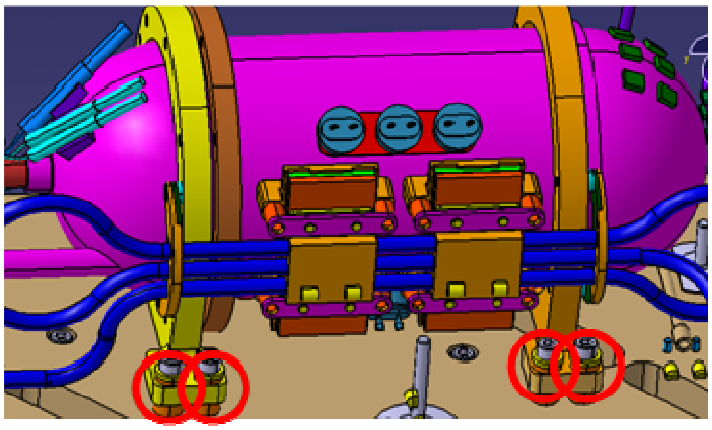
Verify before use the availability of the approved drawing revision

10.6.1 Check the bill of material in the assembly drawing.

10.6.2 Only when indicated in drawing apply a thin layer of Koropron primer in between washers and base plate and or component.

Koropron primer - PN _____ Lot#_____ Exp. Date _____

10.6.3 Install the indicated component on the TTCB base plate as shown in the figure below.



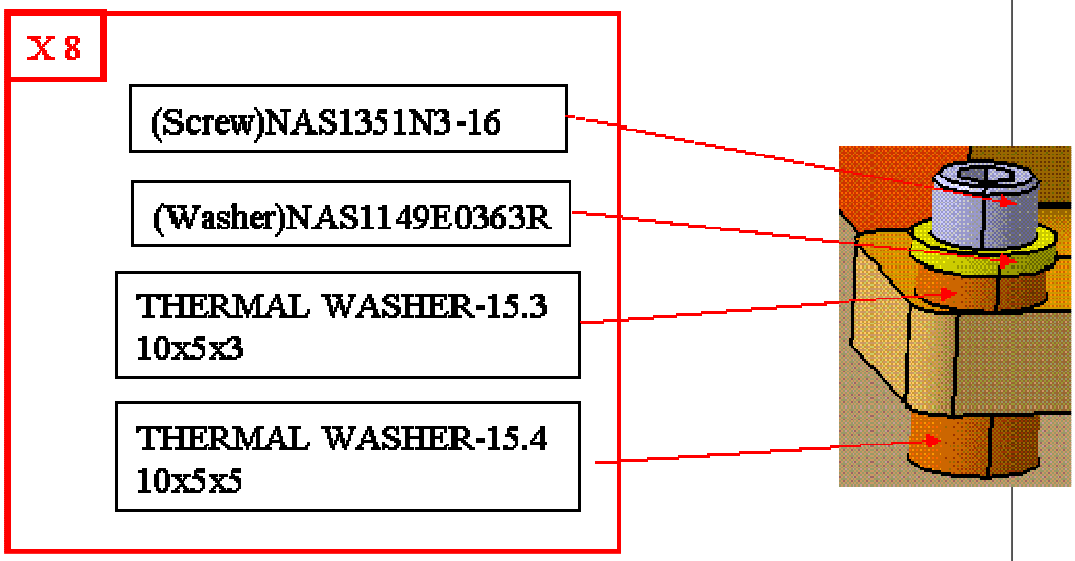


Figure 4: Installation of HX supports to dummy base plate

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20. OPER SEQ. NO.	21. OPERATIONS (Print, Type, or Write Legibly)	VERIFICATION 22. TECH	23. QA/DV

10.6.4 Apply a thin layer of Grease, Braycote 601EF (C1), to the threads of each bolt prior the installation (as reported on the assembly drawings).

Braycote Grease - PN _____ Lot#_____ Exp. Date _____

10.7 Install the fasteners as per figure 4 and record fasteners lot number (write by hand)

Bolt/washer/nut and number NAS number LOT

_____ _____ LOT#_____

_____ _____ LOT#_____

_____ _____ LOT#_____

_____ _____ LOT#_____

_____ _____ LOT#_____

_____ _____ LOT#_____

_____ _____ LOT#_____

_____ _____ LOT#_____

_____ _____ LOT#_____

10.8 Torque the fasteners installed in the former step to the final torque value. Seating torque values are shown in below table

Dash Number	Torque (in*lbf)	
	Max	Min
Screw NAS1351N3-16	42.237	35.901

10.9 Check this value with the table at the end of this ATS.

Locking torque shall be in between **2 – 18 inch*lbf**. (size 0.190”)

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20. OPER SEQ. NO.	21. OPERATIONS (Print, Type, or Write Legibly)	VERIFICATION 22. TECH	VERIFICATION 23. QA/DV
10.10	Check this value with Table 1 at the start of this ATS. Final torque shall be the seating torque ABOVE LOCKING TORQUE. 5% precision on torque.		

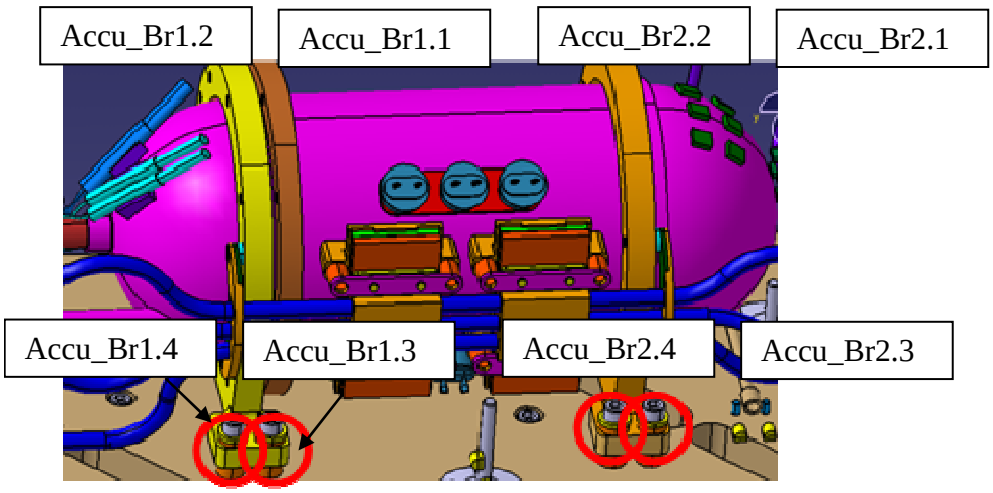

Figure: Accumulator bolt indication

Torque Wrench- Locking Torque (locking is the same as running torque)

PN _____ M# _____ Cal Due Date_____

Torque Wrench- Final Torque

PN _____ M# _____ Cal Due Date_____

Bolt indication (see figure above)	Locking Torque	Final Torque
_____	_____	_____
_____	_____	_____
_____	_____	_____
_____	_____	_____
_____	_____	_____
_____	_____	_____
_____	_____	_____

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20. OPER SEQ. NO.	21. OPERATIONS (Print, Type, or Write Legibly)	VERIFICATION 22. TECH	VERIFICATION 23. QA/DV

Bolt indication (see figure above) Locking Torque Final Torque

_____ _____ _____

_____ _____ _____

_____ _____ _____

_____ _____ _____

10.10.1 End of online operation accumulator

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20. OPER SEQ. NO.	21. OPERATIONS (Print, Type, or Write Legibly)	VERIFICATION 22. TECH	VERIFICATION 23. QA/DV

11. INSTALLATION OF **PREHEATER** ONTO THE TTCB BASE PLATE

11.1 Prepare the TTCS PREHEATER for installation. Perform a visual inspection of the parts to be installed; clean the parts to be installed with Isopropyl Alcohol and let the parts to be installed dry on the clean towel

11.2 Prepare screws and washer to be used for the part installation. Perform a screws and washer visual inspection; clean screws and washers in an Isopropyl Alcohol bath and let screws and washers dry on a clean towel

11.3 Perform a visual inspection of the base plate; check the cleanliness of all the inserts. If necessary clean them with Isopropyl Alcohol

11.4 Weight all the hardware to be installed, including fasteners. Record the weight

ITEM	WEIGHT

SCALE

11.5 PN _____ M# _____ Cal Date_____

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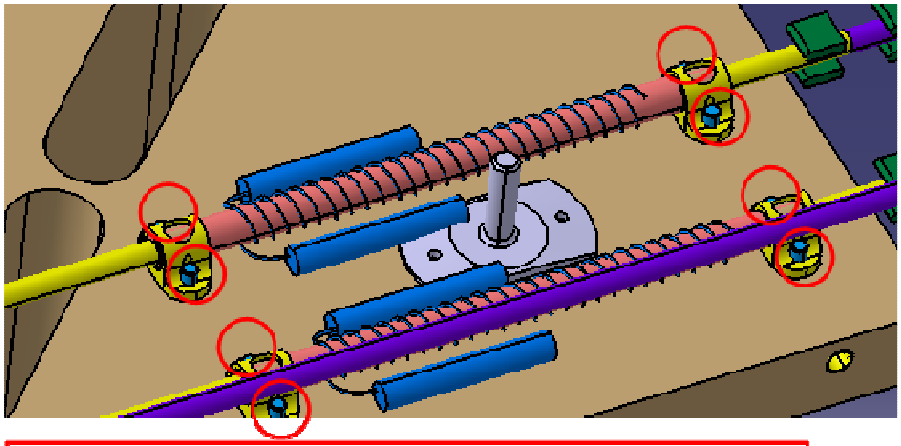
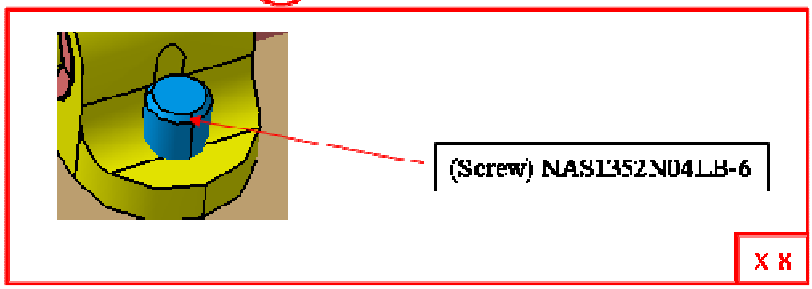
20. OPER SEQ. NO.	21. OPERATIONS (Print, Type, or Write Legibly)	VERIFICATION 22. TECH	VERIFICATION 23. QA/DV
11.6	WARNING: for TTCB installation reference drawings are as stated at the start of this ATS. Verify before use the availability of the approved drawing revision		
11.6.1	Check the bill of material in the assembly drawing.		
11.6.2	Only when indicated in drawing apply a thin layer of Koropron primer in between washers and base plate and or component. Koropron primer - PN _____ Lot#_____ Exp. Date _____		
11.6.3	Install the indicated component on the TTCB base plate as shown in the figure below.		
	  *Figure 4: Installation of pre-heater to base plate*		
11.6.4	Apply a thin layer of Grease, Braycote 601EF (C1), to the threads of each bolt prior the installation (as reported on the assembly drawings). Braycote Grease - PN _____ Lot#_____ Exp. Date _____		
11.7	Install the fasteners as per figure 4 and record fasteners lot number (write by hand) Bolt/washer/nut and number NAS number LOT		

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	6. MOD NO.	

20. OPER SEQ. NO.	21. OPERATIONS (Print, Type, or Write Legibly)	VERIFICATION 22. TECH	VERIFICATION 23. QA/DV
	_____ _____ LOT#_____		
	_____ _____ LOT#_____		
	_____ _____ LOT#_____		
	_____ _____ LOT#_____		
	_____ _____ LOT#_____		
	_____ _____ LOT#_____		
	_____ _____ LOT#_____		
	_____ _____ LOT#_____		
	_____ _____ LOT#_____		
11.8	Torque the fasteners installed in the former step to the final torque value. Seating torque values are shown in below table		
11.9	Check this value with the table at the end of this ATS. **Locking torque shall be in between 0.5– 5 inch*lbf (size 0.112)** **Locking on bolt not as no insert is present.**		
11.10	Check this value with Table 1 at the start of this ATS. Final torque shall be the seating torque ABOVE LOCKING TORQUE.		

Dash Number	Torque (in*lbf)	
Screw	Max	Min
NAS1352N04LB-6	7.459	6.34

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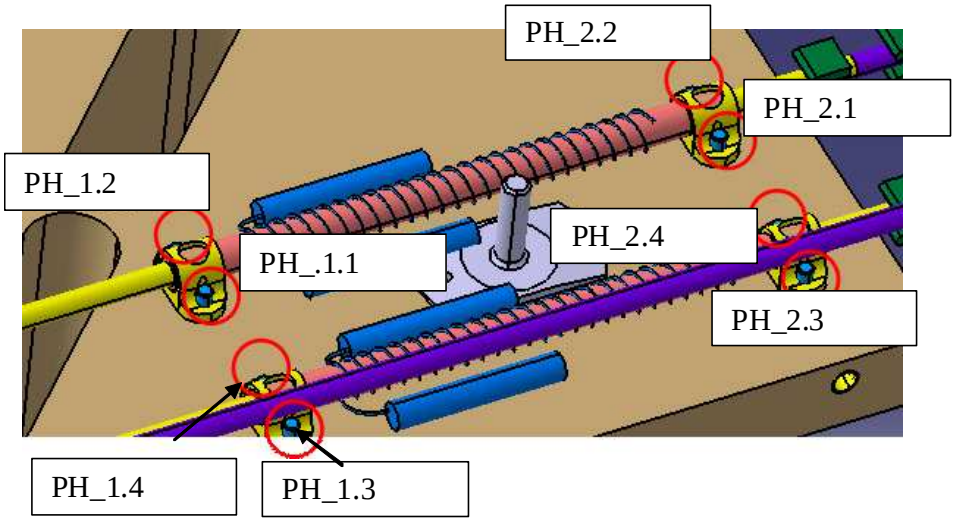
20. OPER SEQ. NO.	21. OPERATIONS (Print, Type, or Write Legibly)	VERIFICATION 22. TECH	VERIFICATION 23. QA/DV

5% precision on torque.



Torque Wrench- Locking Torque (locking is the same as running torque)

PN _____ M# _____ Cal Due Date_____

Torque Wrench- Final Torque

PN _____ M# _____ Cal Due Date_____

Bolt indication (see figure above)	**Locking Torque**	**Final Torque**
_____	_____	_____
_____	_____	_____
_____	_____	_____
_____	_____	_____
_____	_____	_____
_____	_____	_____
_____	_____	_____
_____	_____	_____

Bolt indication (see figure above)	**Locking Torque**	**Final Torque**

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20. OPER SEQ. NO.	21. OPERATIONS (Print, Type, or Write Legibly)	VERIFICATION 22. TECH	VERIFICATION 23. QA/DV
	_____ _____ _____ _____ _____ _____ _____ _____ _____ _____ _____ _____		
11.11	**End of online operation Pre-heater TTCB-P**		

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20. OPER SEQ. NO.	21. OPERATIONS (Print, Type, or Write Legibly)	VERIFICATION	
		22. TECH	23. QA/DV

12. INSTALLATION OF **COLD ORBIT HEATER** ONTO THE TTCB BASE PLATE

12.1 Prepare the TTCS Cold orbit heater primary for installation. Perform a visual inspection of the parts to be installed; clean the parts to be installed with Isopropyl Alcohol and let the parts to be installed dry on the clean towel

12.2 Prepare screws and washer to be used for the part installation. Perform a screws and washer visual inspection; clean screws and washers in an Isopropyl Alcohol bath and let screws and washers dry on a clean towel

12.3 Perform a visual inspection of the base plate; check the cleanliness of all the inserts. If necessary clean them with Isopropyl Alcohol

12.4 Weight all the hardware to be installed, including fasteners. Record the weight

ITEM	WEIGHT

SCALE

12.5 PN _____ M# _____ Cal Date_____

AMS-02 TASK SHEET (ATS) CONTINUATION PAGE	4. ATS NO.	ATS 090127-1-R0
	6. MOD NO.	

20. OPER SEQ. NO.	21. OPERATIONS (Print, Type, or Write Legibly)	VERIFICATION 22. TECH	VERIFICATION 23. QA/DV
12.6	WARNING: TTCB installation reference drawings are as indicated at the start of this ATS. Verify before use the availability of the approved drawing revision		
12.6.1	Check the bill of material in the assembly drawing.		
12.6.2	Only when indicated in drawing apply a thin layer of Koropron primer in between washers and base plate and or component. Koropron primer - PN _____ Lot#_____ Exp. Date _____		
12.6.3	Install the indicated component on the TTCB base plate as shown in the figure below.		

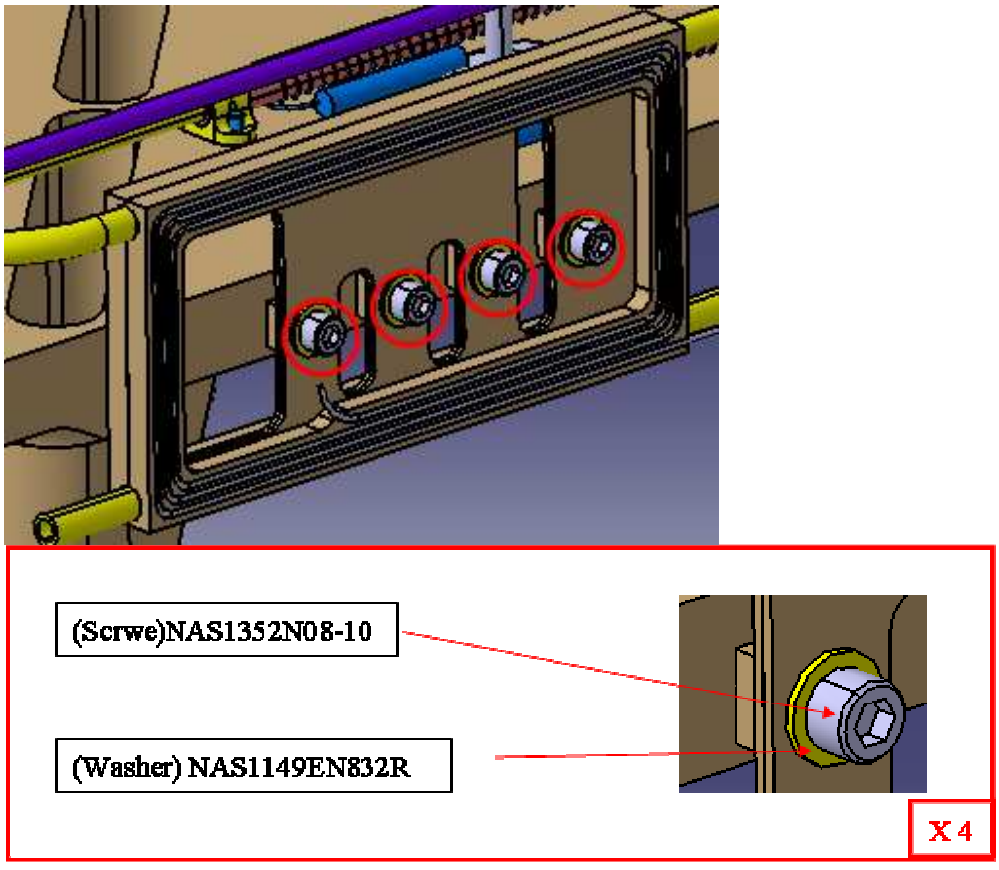

Figure 4: Installation of Cold orbit heater to base plate

12.6.4	Apply a thin layer of Grease, Braycote 601EF (C1), to the threads of each bolt prior the installation (as reported on the assembly drawings). Braycote Grease - PN _____ Lot#_____ Exp. Date _____		

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20. OPER SEQ. NO.	21. OPERATIONS (Print, Type, or Write Legibly)	VERIFICATION 22. TECH	VERIFICATION 23. QA/DV

12.7 Install the fasteners as per figure 4 and record fasteners lot number (write by hand)

Bolt/washer/nut and number NAS number LOT

_____ _____ LOT#_____

_____ _____ LOT#_____

_____ _____ LOT#_____

_____ _____ LOT#_____

_____ _____ LOT#_____

_____ _____ LOT#_____

_____ _____ LOT#_____

_____ _____ LOT#_____

_____ _____ LOT#_____

12.8 Torque the fasteners installed in the former step to the final torque value. Seating torque values are shown in below table

Dash Number	Torque (in*lbf)	
	Max	Min
Screw NAS1352N08-10	24.944	21.203

12.9 Check this value with the table at the end of this ATS.

Locking torque shall be in between **1.5– 15 inch*lbf**.

12.10 Check this value with Table 1 at the start of this ATS.
Final torque shall be the seating torque ABOVE LOCKING TORQUE.
5% precision on torque.

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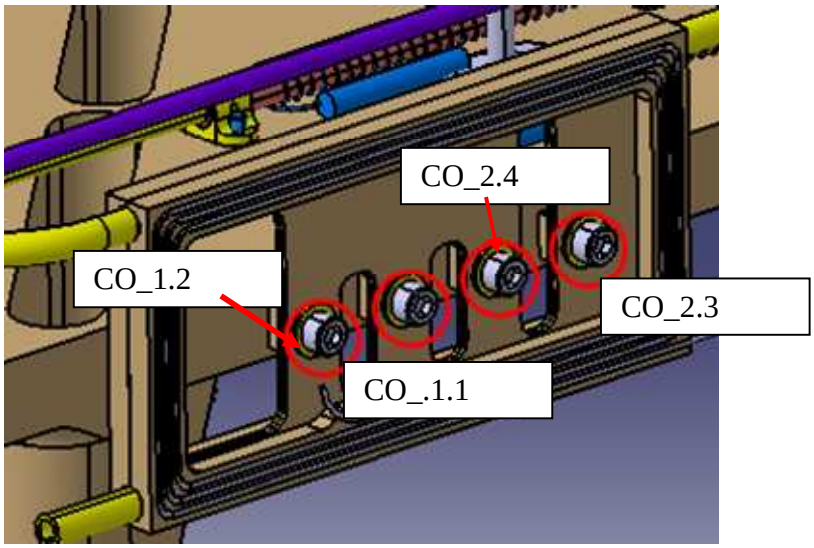
20. OPER SEQ. NO.	21. OPERATIONS (Print, Type, or Write Legibly)	VERIFICATION 22. TECH	VERIFICATION 23. QA/DV



Torque Wrench- Locking Torque (locking is the same as running torque)

PN _____ M# _____ Cal Due Date_____

Torque Wrench- Final Torque

PN _____ M# _____ Cal Due Date_____

Bolt indication (see figure above)	**Locking Torque**	**Final Torque**
_____	_____	_____
_____	_____	_____
_____	_____	_____
_____	_____	_____
_____	_____	_____
_____	_____	_____
_____	_____	_____
_____	_____	_____

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20. OPER SEQ. NO.	21. OPERATIONS (Print, Type, or Write Legibly)	VERIFICATION 22. TECH	VERIFICATION 23. QA/DV
	Bolt indication (see figure above) Locking Torque Final Torque _____ _____ _____ _____ _____ _____ _____ _____ _____ _____ _____ _____		
12.11	**End of online operation cold orbit heater**		

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20. OPER SEQ. NO.	21. OPERATIONS (Print, Type, or Write Legibly)	VERIFICATION 22. TECH	VERIFICATION 23. QA/DV

13. INSTALLATION OF **PUMPS** ONTO THE TTCB DUMMY RADIATOR PLATE

13.1 Prepare the TTCS PUMP for installation. Perform a visual inspection of the parts to be installed; clean the parts to be installed with Isopropyl Alcohol and let the parts to be installed dry on the clean towel

13.2 Prepare screws and washer to be used for the part installation. Perform a screws and washer visual inspection; clean screws and washers in an Isopropyl Alcohol bath and let screws and washers dry on a clean towel

13.3 Perform a visual inspection of the base plate; check the cleanliness of all the inserts. If necessary clean them with Isopropyl Alcohol

13.4 Weight all the hardware to be installed, including fasteners. Record the weight

ITEM	WEIGHT

SCALE

13.5 PN _____ M# _____ Cal Date_____

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	6. MOD NO.	

20. OPER SEQ. NO.	21. OPERATIONS (Print, Type, or Write Legibly)	VERIFICATION 22. TECH	VERIFICATION 23. QA/DV
13.6	WARNING: TTCB installation reference drawings are as indicated at the start of this ATS. Verify before use the availability of the approved drawing revision		
13.6.1	Check the bill of material in the assembly drawing.		
13.6.2	Only when indicated in drawing apply a thin layer of Koropron primer in between washers and base plate and or component. Koropron primer - PN _____ Lot#_____ Exp. Date _____		
13.6.3	Install the indicated component on the TTCB base plate as shown in the figure below.		

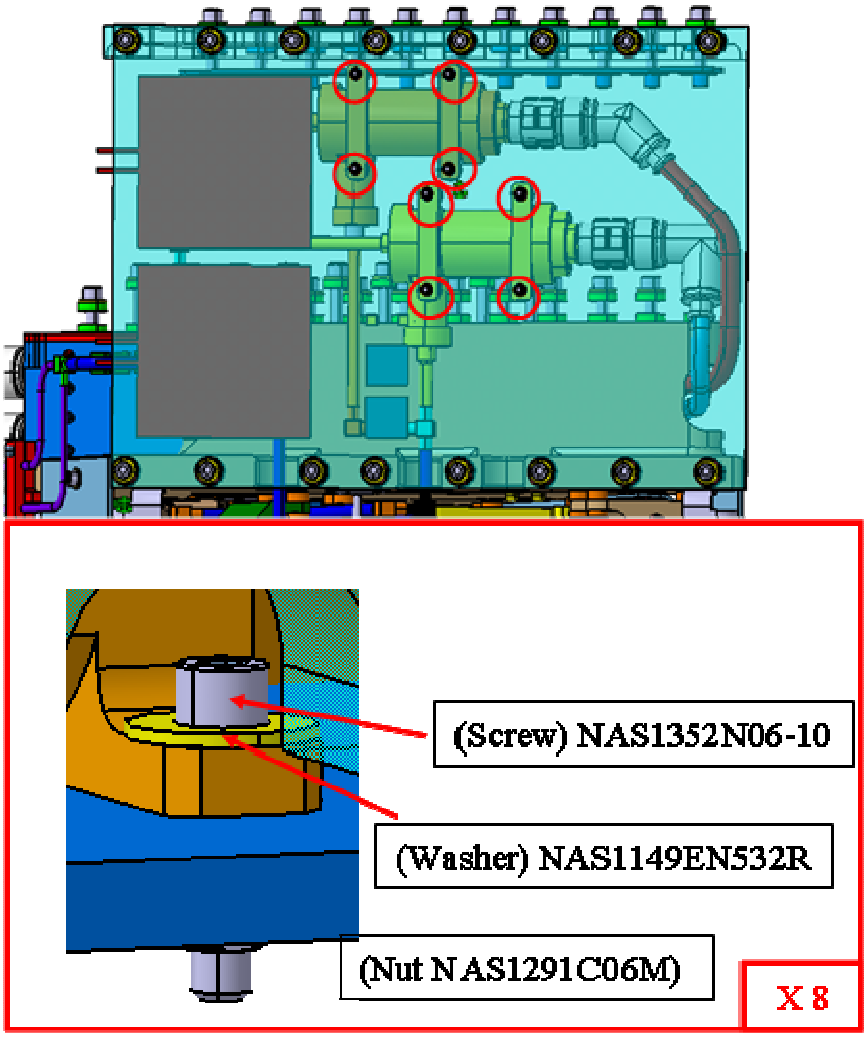

Figure 4: Installation of pumps to the dummy radiator base plate

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20. OPER SEQ. NO.	21. OPERATIONS (Print, Type, or Write Legibly)	VERIFICATION 22. TECH	23. QA/DV

13.6.4 Apply a thin layer of Grease, Braycote 601EF (C1), to the threads of each bolt prior the installation (as reported on the assembly drawings).

Braycote Grease - PN _____ Lot#_____ Exp. Date _____

13.7 Install the fasteners as per figure 4 and record fasteners lot number (write by hand)

Bolt/washer/nut and number NAS number LOT

_____ _____ LOT#_____

_____ _____ LOT#_____

_____ _____ LOT#_____

_____ _____ LOT#_____

_____ _____ LOT#_____

_____ _____ LOT#_____

_____ _____ LOT#_____

_____ _____ LOT#_____

_____ _____ LOT#_____

13.8 Torque the fasteners installed in the former step to the final torque value. Seating torque values are shown in below table.

Dash Number	Torque (in*lbf)	
	Max	Min
Screw NAS1352N06-10	13.861	11.782

13.9 Check this value with the table at the end of this ATS.

Locking torque shall be in between **1– 10 inch*lbf (size 0.138)**.

13.10 Check this value with Table 1 at the start of this ATS.
Final torque shall be the seating torque ABOVE LOCKING TORQUE.
5% precision on torque.

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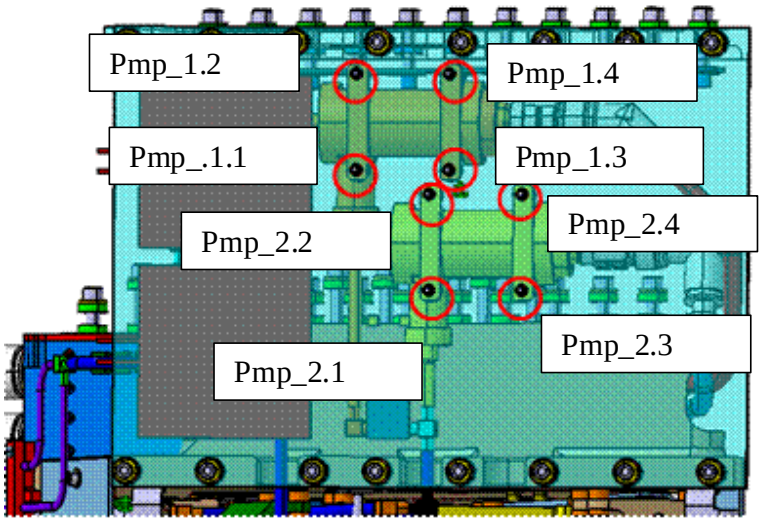
20. OPER SEQ. NO.	21. OPERATIONS (Print, Type, or Write Legibly)	VERIFICATION 22. TECH	VERIFICATION 23. QA/DV



Torque Wrench- Locking Torque (locking is the same as running torque)

PN _____ M# _____ Cal Due Date_____

Torque Wrench- Final Torque

PN _____ M# _____ Cal Due Date_____

Bolt indication (see figure above)	**Locking Torque**	**Final Torque**
_____	_____	_____
_____	_____	_____
_____	_____	_____
_____	_____	_____
_____	_____	_____
_____	_____	_____
_____	_____	_____
_____	_____	_____

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20. OPER SEQ. NO.	21. OPERATIONS (Print, Type, or Write Legibly)	VERIFICATION 22. TECH	VERIFICATION 23. QA/DV
	Bolt indication (see figure above) Locking Torque Final Torque _____ _____ _____ _____ _____ _____ _____ _____ _____ _____ _____ _____		
13.11	**End of online operation pumps**		

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20. OPER SEQ. NO.	21. OPERATIONS (Print, Type, or Write Legibly)	VERIFICATION 22. TECH	VERIFICATION 23. QA/DV

14. INSTALLATION OF **CONNECTOR PLATE TO BOX COVER**

14.1 Prepare the CONNECTRO PLATE for installation. Perform a visual inspection of the parts to be installed; clean the parts to be installed with Isopropyl Alcohol and let the parts to be installed dry on the clean towel

14.2 Prepare screws and washer to be used for the part installation. Perform a screws and washer visual inspection; clean screws and washers in an Isopropyl Alcohol bath and let screws and washers dry on a clean towel

14.3 Perform a visual inspection of the COVER check the cleanliness of all the RIVNUTS. If necessary clean them with Isopropyl Alcohol

14.4 Weight all the hardware to be installed, including fasteners. Record the weight

ITEM	WEIGHT

SCALE

14.5 PN _____ M# _____ Cal Date_____

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4. ATS NO. ATS 090127-1-R0

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20. OPER SEQ. NO.	21. OPERATIONS (Print, Type, or Write Legibly)	VERIFICATION 22. TECH	23. QA/DV
14.6	WARNING: TTCB installation reference drawings are as indicated at the start of this ATS. Verify before use the availability of the approved drawing revision		
14.6.1	Check the bill of material in the assembly drawing.		
14.6.2	Only when indicated in drawing apply a thin layer of Koropron primer in between washers and base plate and or component. Koropron primer - PN _____ Lot#_____ Exp. Date _____		
14.6.3	Install the indicated component on the TTCB base plate as shown in the figure below.		

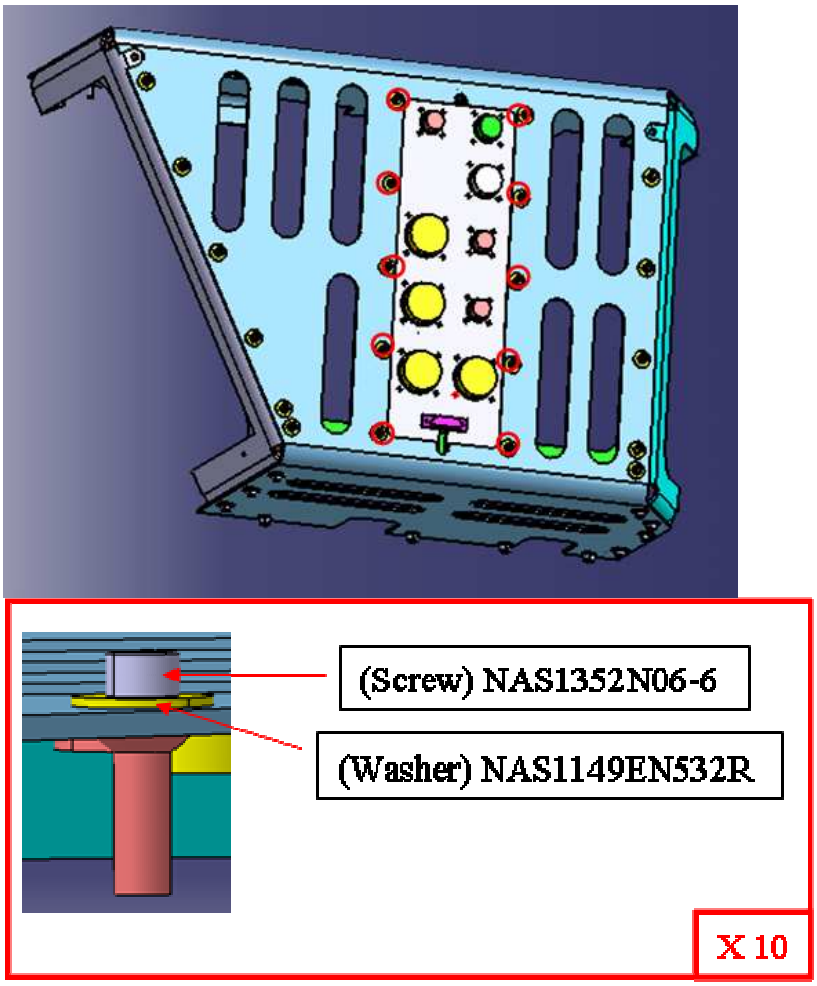

Figure 4: Installation of connector plate to cover

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4. ATS NO. ATS 090127-1-R0

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20. OPER SEQ. NO.	21. OPERATIONS (Print, Type, or Write Legibly)	VERIFICATION 22. TECH	23. QA/DV

14.6.4 Apply a thin layer of Grease, Braycote 601EF (C1), to the threads of each bolt prior the installation (as reported on the assembly drawings).

Braycote Grease - PN _____ Lot#_____ Exp. Date _____

14.7 Install the fasteners as per figure 4 and record fasteners lot number (write by hand)

Bolt/washer/nut and number NAS number LOT

_____ _____ LOT#_____

_____ _____ LOT#_____

_____ _____ LOT#_____

_____ _____ LOT#_____

_____ _____ LOT#_____

_____ _____ LOT#_____

_____ _____ LOT#_____

_____ _____ LOT#_____

_____ _____ LOT#_____

14.8 Torque the fasteners installed in the former step to the final torque value. Seating torque values are shown in below table.

Dash Number	Torque (in*lbf)	
	Max	Min
Screw NAS1352N06-6	13.861	11.782

14.9 Check this value with the table at the end of this ATS.

Locking torque shall be in between **1– 10 inch*lbf (size 0.138)**.

14.10 Check this value with Table 1 at the start of this ATS.
Final torque shall be the seating torque ABOVE LOCKING TORQUE.
5% precision on torque.

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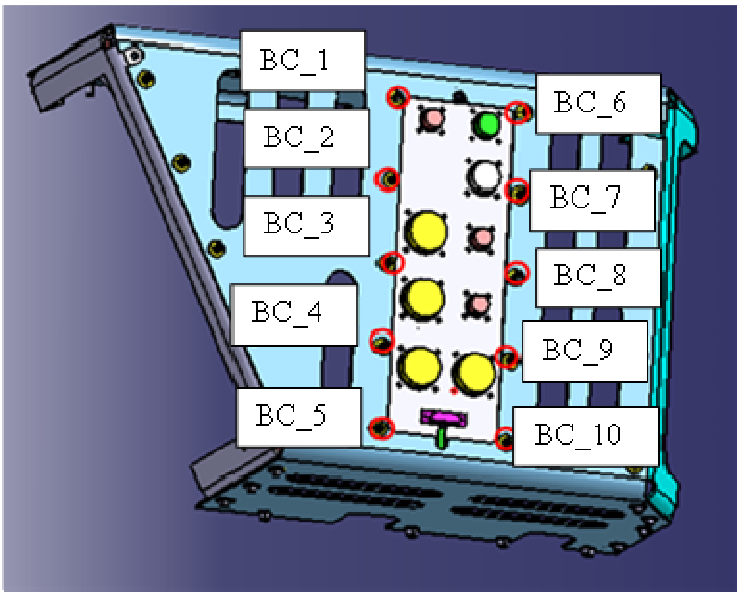
20. OPER SEQ. NO.	21. OPERATIONS (Print, Type, or Write Legibly)	VERIFICATION 22. TECH	VERIFICATION 23. QA/DV



Torque Wrench- Locking Torque (locking is the same as running torque)

PN _____ M# _____ Cal Due Date_____

Torque Wrench- Final Torque

PN _____ M# _____ Cal Due Date_____

Bolt indication (see figure above)	**Locking Torque**	**Final Torque**
_____	_____	_____
_____	_____	_____
_____	_____	_____
_____	_____	_____
_____	_____	_____
_____	_____	_____
_____	_____	_____
_____	_____	_____

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20. OPER SEQ. NO.	21. OPERATIONS (Print, Type, or Write Legibly)	VERIFICATION 22. TECH	VERIFICATION 23. QA/DV
	Bolt indication (see figure above) Locking Torque Final Torque _____ _____ _____ _____ _____ _____ _____ _____ _____ _____ _____ _____		
14.11	**End of online operation cover and connector plate**		

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20. OPER SEQ. NO.	21. OPERATIONS (Print, Type, or Write Legibly)	VERIFICATION 22. TECH	VERIFICATION 23. QA/DV

15. INSTALLATION OF **Cover to CoverRibs (PPBOX & PPfront &PPback)**

15.1 Prepare the Cover and Cover ribs for installation. Perform a visual inspection of the parts to be installed; clean the parts to be installed with Isopropyl Alcohol and let the parts to be installed dry on the clean towel

15.2 Prepare screws and washer to be used for the part installation. Perform a screws and washer visual inspection; clean screws and washers in an Isopropyl Alcohol bath and let screws and washers dry on a clean towel

15.3 Perform a visual inspection of the COVER check the cleanliness of all the RIVNUTS. If necessary clean them with Isopropyl Alcohol

15.4 Weight all the hardware to be installed, including fasteners. Record the weight

ITEM	WEIGHT

SCALE

15.5 PN _____ M# _____ Cal Date_____

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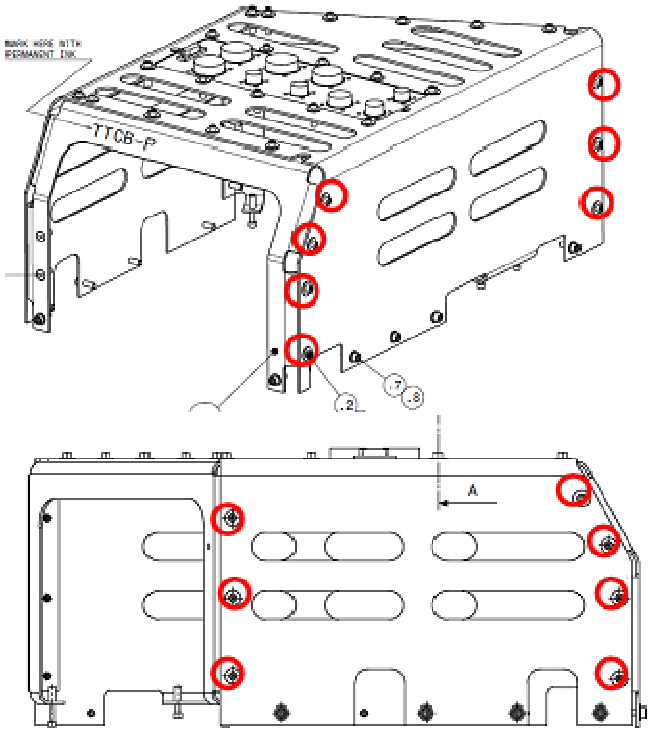
20. OPER SEQ. NO.	21. OPERATIONS (Print, Type, or Write Legibly)	VERIFICATION 22. TECH	VERIFICATION 23. QA/DV
15.6	WARNING: TTCB installation reference drawings are as indicated at the start of this ATS. Verify before use the availability of the approved drawing revision		
15.6.1	Check the bill of material in the assembly drawing.		
15.6.2	Only when indicated in drawing apply a thin layer of Koropron primer in between washers and base plate and or component. Koropron primer - PN _____ Lot#_____ Exp. Date _____		
15.6.3	Install the indicated components as shown in the figure below.		



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20. OPER SEQ. NO.	21. OPERATIONS (Print, Type, or Write Legibly)	VERIFICATION 22. TECH	23. QA/DV

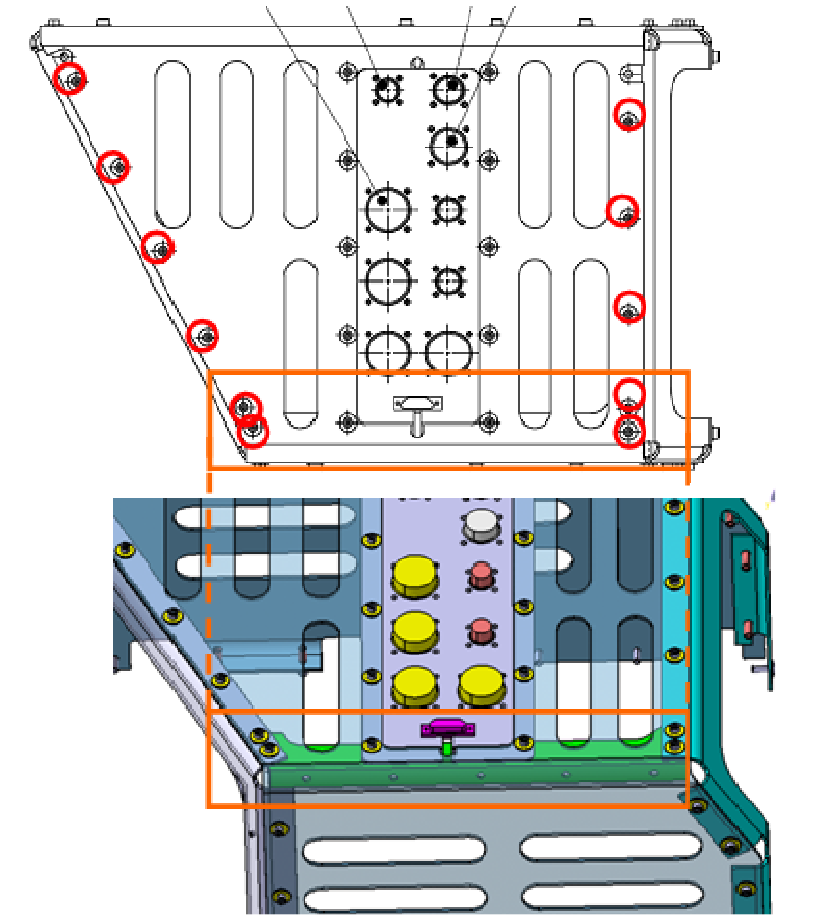

Figure 4: Installation of cover on ribs

15.6.4 Apply a thin layer of Grease, Braycote 601EF (C1), to the threads of each bolt prior the installation (as reported on the assembly drawings).

Braycote Grease - PN _____ Lot#_____ Exp. Date _____

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20. OPER SEQ. NO.	21. OPERATIONS (Print, Type, or Write Legibly)	VERIFICATION 22. TECH	VERIFICATION 23. QA/DV
15.7	Install the fasteners as per figure 4 and record fasteners lot number (write by hand) Bolt/washer/nut and number NAS number LOT _____ _____ LOT#_____ _____ _____ LOT#_____ _____ _____ LOT#_____ _____ _____ LOT#_____ _____ _____ LOT#_____ _____ _____ LOT#_____ _____ _____ LOT#_____ _____ _____ LOT#_____ _____ _____ LOT#_____		
15.8	Torque the fasteners installed in the former step to the final torque value. Seating torque values are shown in below table.		
15.9	Check this value with the table at the end of this ATS. Locking torque shall be in between **1– 10 inch*lbf (size 0.138)**.		
15.10	Check this value with Table 1 at the start of this ATS. Final torque shall be the seating torque ABOVE LOCKING TORQUE. 5% precision on torque.		

Dash Number	Torque (in*lbf)	
	Max	Min
Screw NAS1352N06-6	13.861	11.782

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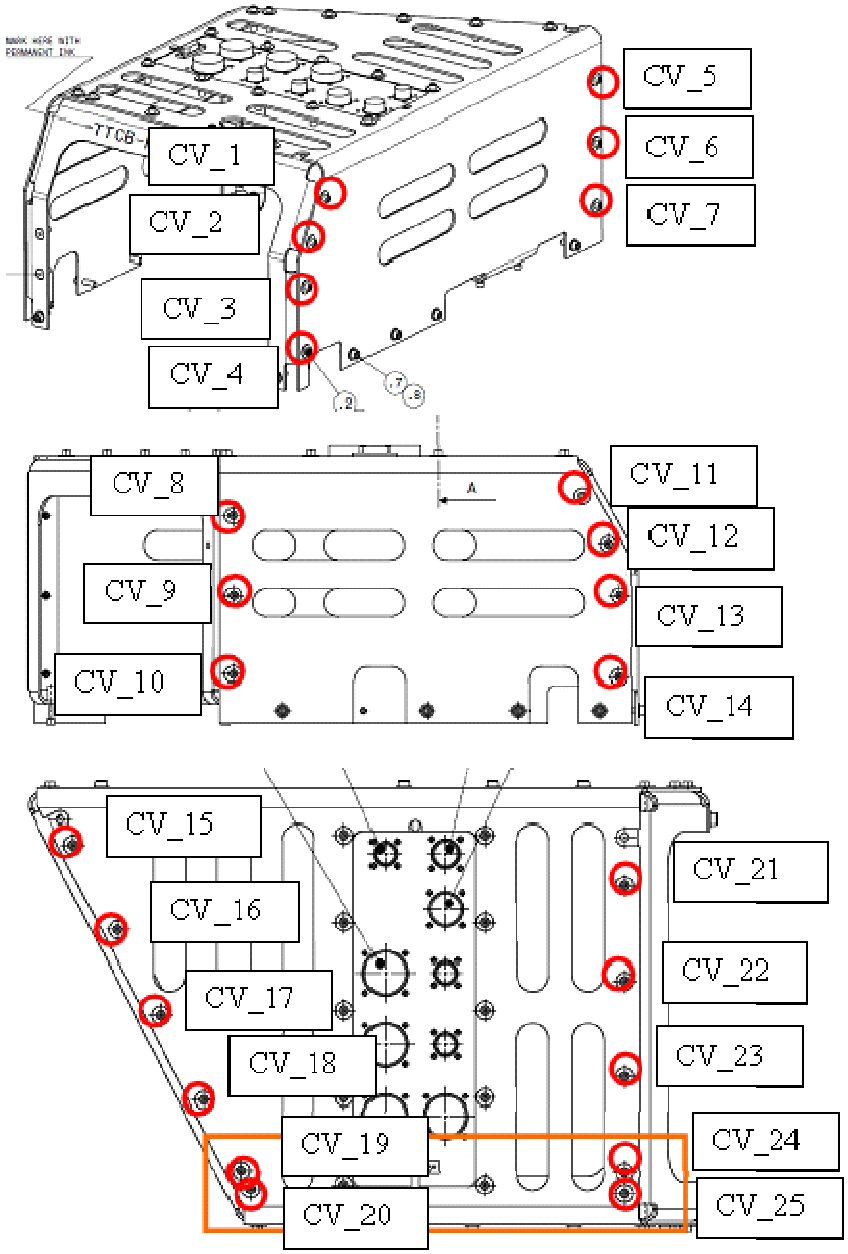
20. OPER SEQ. NO.	21. OPERATIONS (Print, Type, or Write Legibly)	VERIFICATION 22. TECH	VERIFICATION 23. QA/DV



Torque Wrench- Locking Torque (locking is the same as running torque)

PN _____ M# _____ Cal Due Date_____

Torque Wrench- Final Torque

PN _____ M# _____ Cal Due Date_____

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		22. TECH	23. QA/DV

Bolt indication (see figure above) **Locking Torque** **Final Torque**

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20. OPER SEQ. NO.	21. OPERATIONS (Print, Type, or Write Legibly)	VERIFICATION 22. TECH	VERIFICATION 23. QA/DV
	Bolt indication (see figure above) Locking Torque Final Torque _____ **End of online operation cover to ribs installation**		

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20. OPER SEQ. NO.	21. OPERATIONS (Print, Type, or Write Legibly)	VERIFICATION 22. TECH	VERIFICATION 23. QA/DV

16. INSTALLATION OF **FRONT COVER RIB TO BASE PLATE**

16.1 Prepare the FRONT COVER RIB for installation. Perform a visual inspection of the parts to be installed; clean the parts to be installed with Isopropyl Alcohol and let the parts to be installed dry on the clean towel

16.2 Prepare screws and washer to be used for the part installation. Perform a screws and washer visual inspection; clean screws and washers in an Isopropyl Alcohol bath and let screws and washers dry on a clean towel

16.3 Perform a visual inspection of the BASE PLATE check the cleanliness of all the INSERTS. If necessary clean them with Isopropyl Alcohol

16.4 Weight all the hardware to be installed, including fasteners. Record the weight

ITEM	WEIGHT

SCALE

16.5 PN _____ M# _____ Cal Date_____

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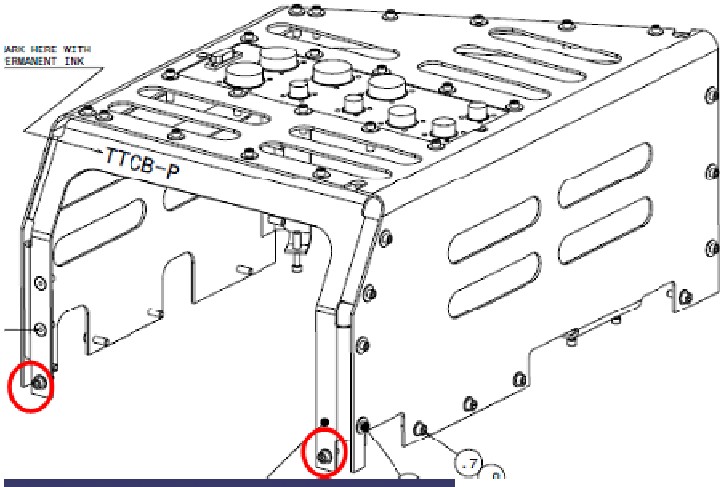
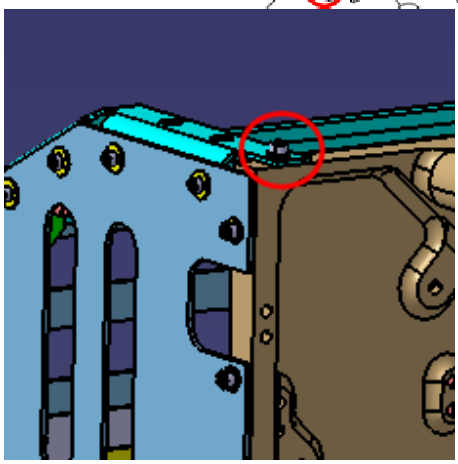
20. OPER SEQ. NO.	21. OPERATIONS (Print, Type, or Write Legibly)	VERIFICATION 22. TECH	VERIFICATION 23. QA/DV
16.6	WARNING: TTCB installation reference drawings are as indicated at the start of this ATS. Verify before use the availability of the approved drawing revision		
16.6.1	Check the bill of material in the assembly drawing.		
16.6.2	Only when indicated in drawing apply a thin layer of Koropron primer in between washers and base plate and or component. Koropron primer - PN _____ Lot#_____ Exp. Date _____		
16.6.3	Install the indicated components as shown in the figure below.		





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20. OPER SEQ. NO.	21. OPERATIONS (Print, Type, or Write Legibly)	VERIFICATION 22. TECH	VERIFICATION 23. QA/DV

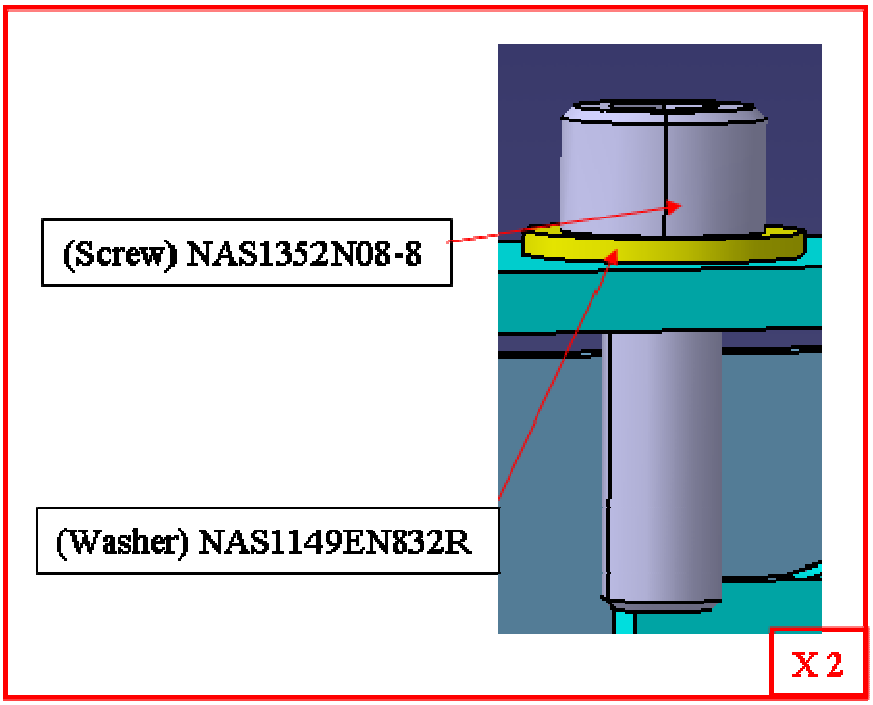

Figure 4: Connection of Front cover rib to base plate

16.6.4 Apply a thin layer of Grease, Braycote 601EF (C1), to the threads of each bolt prior the installation (as reported on the assembly drawings).

Braycote Grease - PN _____ Lot#_____ Exp. Date _____

16.7 Install the fasteners as per figure 4 and record fasteners lot number (write by hand)

Bolt/washer/nut and number NAS number LOT

_____ _____ LOT#_____

_____ _____ LOT#_____

_____ _____ LOT#_____

_____ _____ LOT#_____

_____ _____ LOT#_____

_____ _____ LOT#_____

_____ _____ LOT#_____

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20. OPER SEQ. NO.	21. OPERATIONS (Print, Type, or Write Legibly)	VERIFICATION 22. TECH	23. QA/DV

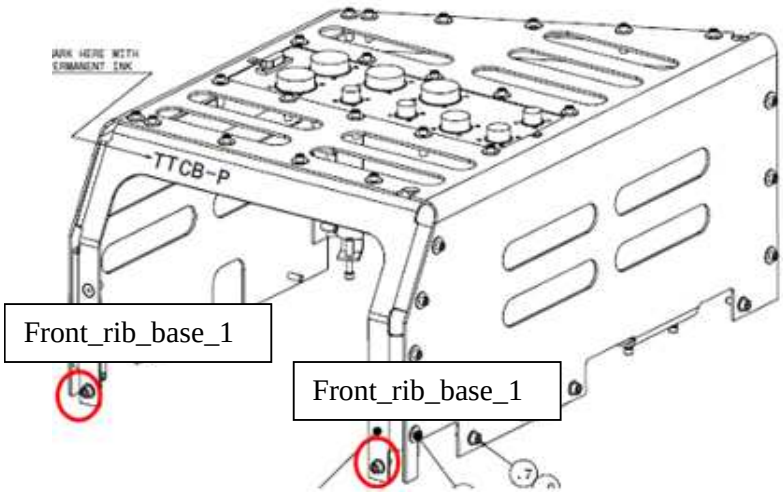
16.8 Torque the fasteners installed in the former step to the final torque value. Seating torque values are shown in below table.

Dash Number	Torque (in*lbf)	
Screw	Max	Min
NAS1352N08-8	24.944	21.203

16.9 Check this value with the table at the end of this ATS.

Locking torque shall be in between **1.5 – 15 inch*lbf (size 0.164)**.

16.10 Check this value with Table 1 at the start of this ATS.
Final torque shall be the seating torque ABOVE LOCKING TORQUE.
5% precision on torque.



Torque Wrench- Locking Torque (locking is the same as running torque)

PN _____ M# _____ Cal Due Date_____

Torque Wrench- Final Torque

PN _____ M# _____ Cal Due Date_____

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20. OPER SEQ. NO.	21. OPERATIONS (Print, Type, or Write Legibly)	VERIFICATION 22. TECH	23. QA/DV
	Bolt indication (see figure above) Locking Torque Final Torque _____ _____ _____ _____ _____ _____ _____ _____ _____ _____ _____ _____		
16.11	**End of online operation cover to front cover rib to base plate**		

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20. OPER SEQ. NO.	21. OPERATIONS (Print, Type, or Write Legibly)	VERIFICATION 22. TECH	VERIFICATION 23. QA/DV

17. INSTALLATION OF **Cover to Base plate rivnuts 1**

17.1 Prepare the Cover for installation. Perform a visual inspection of the parts to be installed; clean the parts to be installed with Isopropyl Alcohol and let the parts to be installed dry on the clean towel

17.2 Prepare screws and washer to be used for the part installation. Perform a screws and washer visual inspection; clean screws and washers in an Isopropyl Alcohol bath and let screws and washers dry on a clean towel

17.3 Perform a visual inspection of the COVER check the cleanliness of all the RIVNUTS. If necessary clean them with Isopropyl Alcohol

17.4 Weight all the hardware to be installed, including fasteners. Record the weight

ITEM	WEIGHT

SCALE

17.5 PN _____ M# _____ Cal Date_____

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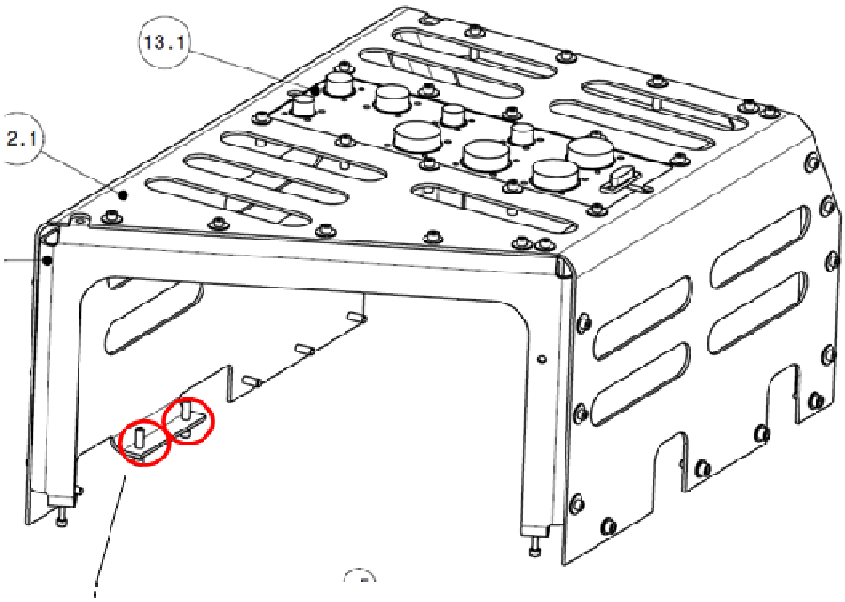
20. OPER SEQ. NO.	21. OPERATIONS (Print, Type, or Write Legibly)	VERIFICATION 22. TECH	VERIFICATION 23. QA/DV
17.6	WARNING: TTCB installation reference drawings are as indicated at the start of this ATS. Verify before use the availability of the approved drawing revision		
17.6.1	Check the bill of material in the assembly drawing.		
17.6.2	Only when indicated in drawing apply a thin layer of Koropron primer in between washers and base plate and or component. Koropron primer - PN _____ Lot#_____ Exp. Date _____		
17.6.3	Install the indicated components as shown in the figure below.		



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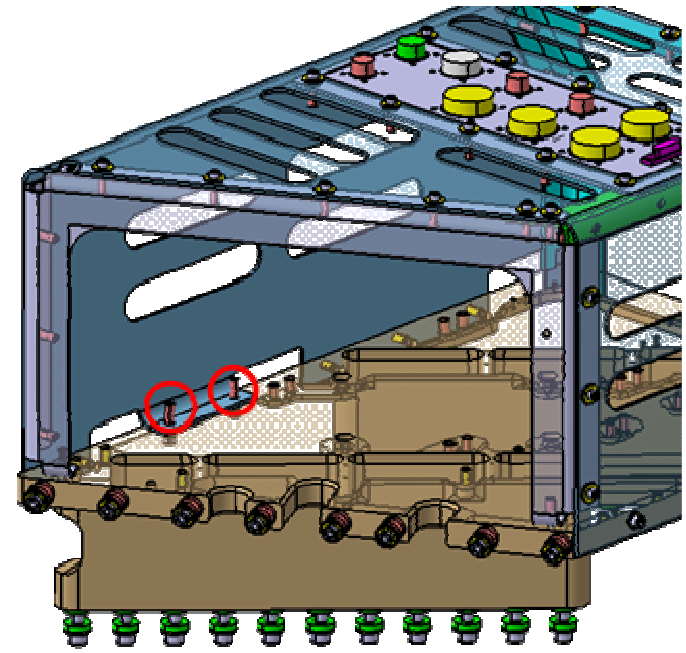
20. OPER SEQ. NO.	21. OPERATIONS (Print, Type, or Write Legibly)	VERIFICATION 22. TECH	23. QA/DV



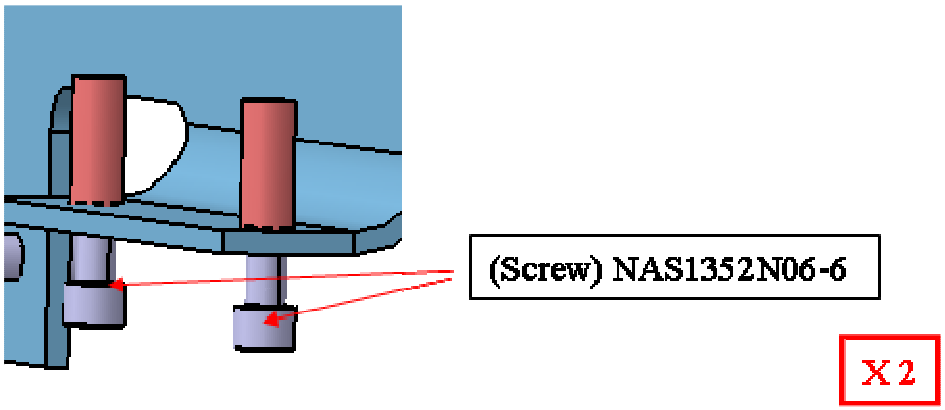


Figure 4: Connection of cover to base plate

17.6.4 Apply a thin layer of Grease, Braycote 601EF (C1), to the threads of each bolt prior the installation (as reported on the assembly drawings).

Braycote Grease - PN _____ Lot#_____ Exp. Date _____

17.7 Install the fasteners as per figure 4 and record fasteners lot number (write by hand)

Bolt/washer/nut and number NAS number LOT

_____ _____ LOT#_____

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4. ATS NO. ATS 090127-1-R0

6. MOD NO.

20. OPER SEQ. NO.	21. OPERATIONS (Print, Type, or Write Legibly)	VERIFICATION 22. TECH	23. QA/DV

_____ _____ LOT#_____

_____ _____ LOT#_____

_____ _____ LOT#_____

_____ _____ LOT#_____

_____ _____ LOT#_____

_____ _____ LOT#_____

_____ _____ LOT#_____

_____ _____ LOT#_____

17.8 Torque the fasteners installed in the former step to the final torque value. Seating torque values are shown in below table.

Dash Number	Torque (in*lbf)	
	Max	Min
Screw NAS1352N06-6	13.861	11.782

17.9 Check this value with the table at the end of this ATS.

Locking torque shall be in between **1– 10 inch*lbf (size 0.138)**.

17.10 Check this value with Table 1 at the start of this ATS.
Final torque shall be the seating torque ABOVE LOCKING TORQUE.
5% precision on torque.

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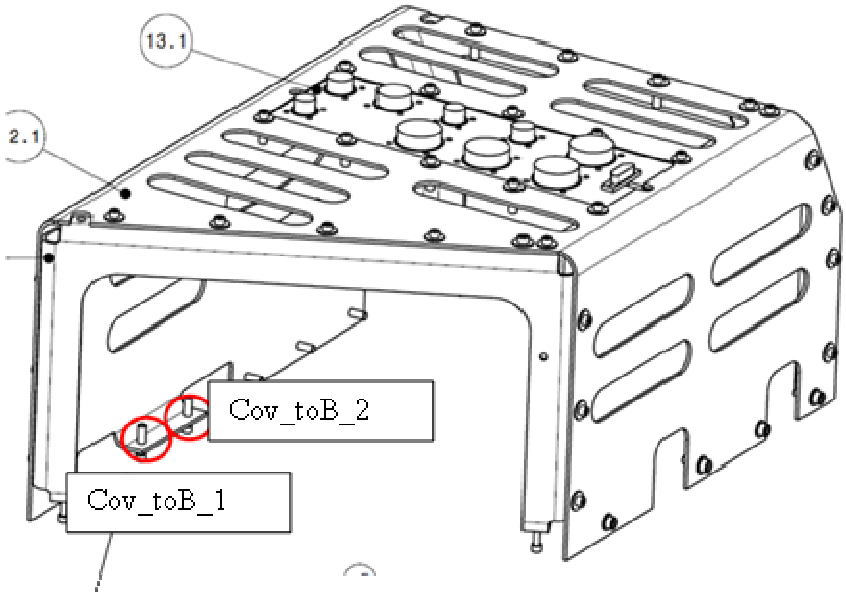
20. OPER SEQ. NO.	21. OPERATIONS (Print, Type, or Write Legibly)	VERIFICATION 22. TECH	VERIFICATION 23. QA/DV



Torque Wrench- Locking Torque (locking is the same as running torque)

PN _____ M# _____ Cal Due Date_____

Torque Wrench- Final Torque

PN _____ M# _____ Cal Due Date_____

Bolt indication (see figure above)	**Locking Torque**	**Final Torque**
_____	_____	_____
_____	_____	_____
_____	_____	_____
_____	_____	_____

17.11 **End of online operation cover to base plate rivnuts**

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20. OPER SEQ. NO.	21. OPERATIONS (Print, Type, or Write Legibly)	VERIFICATION 22. TECH	VERIFICATION 23. QA/DV
18.	INSTALLATION OF **Cover Rib to Base plate rivnuts 2**		
18.1	Prepare the Rib for installation. Perform a visual inspection of the parts to be installed; clean the parts to be installed with Isopropyl Alcohol and let the parts to be installed dry on the clean towel		
18.2	Prepare screws and washer to be used for the part installation. Perform a screws and washer visual inspection; clean screws and washers in an Isopropyl Alcohol bath and let screws and washers dry on a clean towel		
18.3	Perform a visual inspection of the base plate check the cleanliness of all the holes. If necessary clean them with Isopropyl Alcohol		
18.4	Weight all the hardware to be installed, including fasteners. Record the weight		

ITEM	WEIGHT

SCALE

18.5 PN _____ M# _____ Cal Date_____

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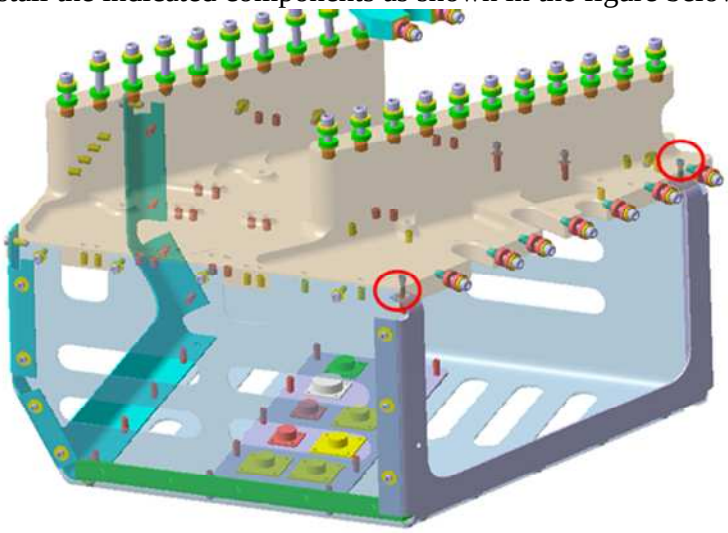
20. OPER SEQ. NO.	21. OPERATIONS (Print, Type, or Write Legibly)	VERIFICATION 22. TECH	VERIFICATION 23. QA/DV
18.6	WARNING: TTCB installation reference drawings are as indicated at the start of this ATS. Verify before use the availability of the approved drawing revision		
18.6.1	Check the bill of material in the assembly drawing.		
18.6.2	Only when indicated in drawing apply a thin layer of Koropron primer in between washers and base plate and or component. Koropron primer - PN _____ Lot#_____ Exp. Date _____		
18.6.3	Install the indicated components as shown in the figure below.		



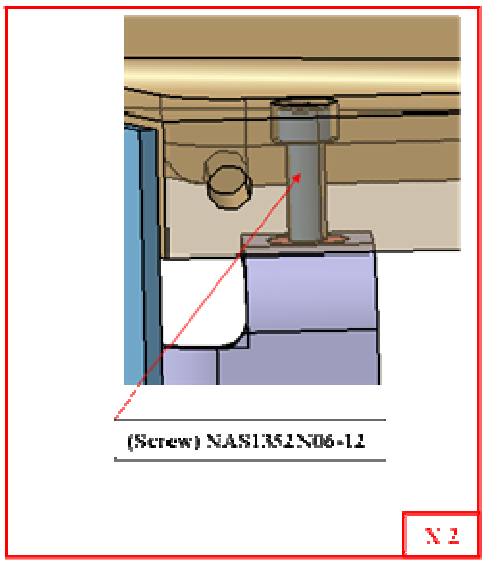


Figure 4: Connection of cover rib to base plate

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20. OPER SEQ. NO.	21. OPERATIONS (Print, Type, or Write Legibly)	VERIFICATION 22. TECH	23. QA/DV

18.6.4 Apply a thin layer of Grease, Braycote 601EF (C1), to the threads of each bolt prior the installation (as reported on the assembly drawings).

Braycote Grease - PN _____ Lot#_____ Exp. Date _____

18.7 Install the fasteners as per figure 4 and record fasteners lot number (write by hand)

Bolt/washer/nut and number NAS number LOT

_____ _____ LOT#_____

_____ _____ LOT#_____

_____ _____ LOT#_____

_____ _____ LOT#_____

_____ _____ LOT#_____

_____ _____ LOT#_____

_____ _____ LOT#_____

_____ _____ LOT#_____

_____ _____ LOT#_____

18.8 Torque the fasteners installed in the former step to the final torque value. Seating torque values are shown in below table.

Dash Number	Torque (in*lbf)	
	Max	Min
Screw NAS1352N06-12	13.861	11.782

18.9 Check this value with the table at the end of this ATS.

Locking torque shall be in between **1– 10 inch*lbf (size 0.138)**.

18.10 Check this value with Table 1 at the start of this ATS.
Final torque shall be the seating torque ABOVE LOCKING TORQUE.
5% precision on torque.

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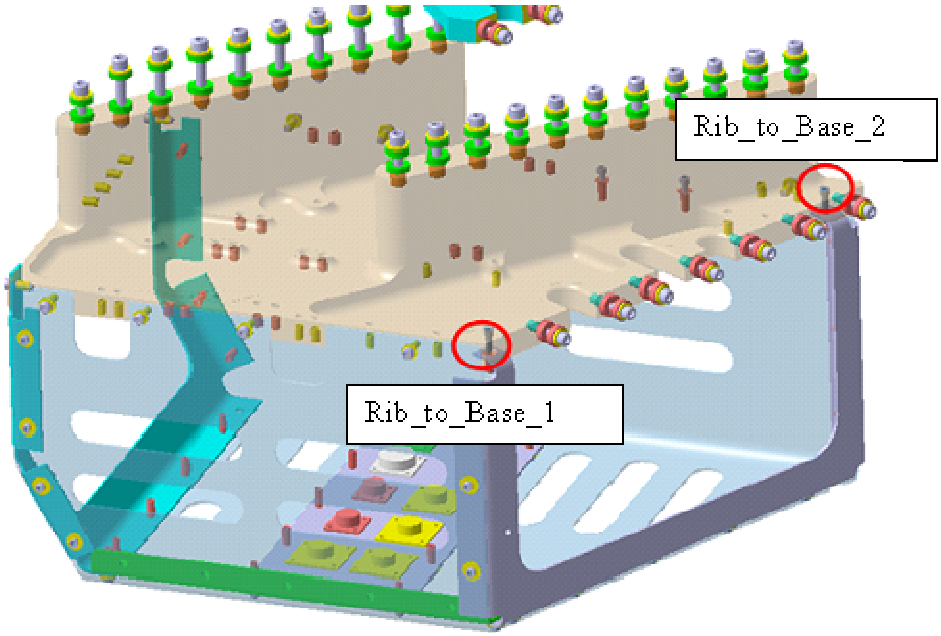
20. OPER SEQ. NO.	21. OPERATIONS (Print, Type, or Write Legibly)	VERIFICATION 22. TECH	VERIFICATION 23. QA/DV



Torque Wrench- Locking Torque (locking is the same as running torque)

PN _____ M# _____ Cal Due Date_____

Torque Wrench- Final Torque

PN _____ M# _____ Cal Due Date_____

Bolt indication (see figure above)	**Locking Torque**	**Final Torque**
_____	_____	_____
_____	_____	_____
_____	_____	_____
_____	_____	_____

End of online operation cover to base plate rivnuts 2

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20. OPER SEQ. NO.	21. OPERATIONS (Print, Type, or Write Legibly)	VERIFICATION 22. TECH	VERIFICATION 23. QA/DV

19. INSTALLATION OF **TEMPORARY INSTALLATION TOOL TO COVER**

19.1 Prepare the Cover and auxilary tool for installation. Perform a visual inspection of the parts to be installed; clean the parts to be installed with Isopropyl Alcohol and let the parts to be installed dry on the clean towel

19.2 Prepare screws and washer to be used for the part installation. Perform a screws and washer visual inspection; clean screws and washers in an Isopropyl Alcohol bath and let screws and washers dry on a clean towel

19.3 Perform a visual inspection of the COVER check the cleanliness of all the RIVNUTS. If necessary clean them with Isopropyl Alcohol

19.4 Weight all the hardware to be installed, including fasteners. Record the weight

ITEM	WEIGHT

SCALE

19.5 PN _____ M# _____ Cal Date_____

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4. ATS NO. ATS 090127-1-R0

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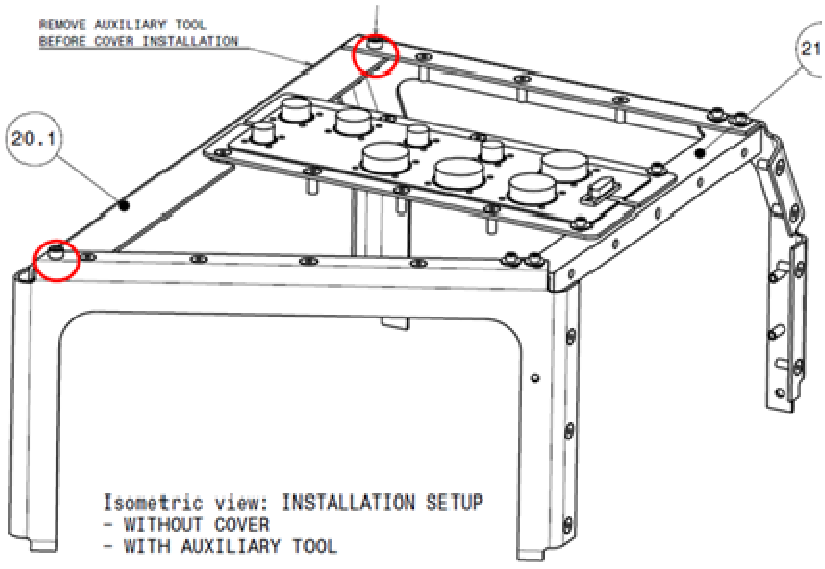
20. OPER SEQ. NO.	21. OPERATIONS (Print, Type, or Write Legibly)	VERIFICATION 22. TECH	23. QA/DV
19.6	WARNING: TTCB installation reference drawings are as indicated at the start of this ATS. Verify before use the availability of the approved drawing revision		
19.6.1	Check the bill of material in the assembly drawing.		
19.6.2	Only when indicated in drawing apply a thin layer of Koropron primer in between washers and base plate and or component. Koropron primer - PN _____ Lot#_____ Exp. Date _____		
19.6.3	Install the indicated components as shown in the figure below.		



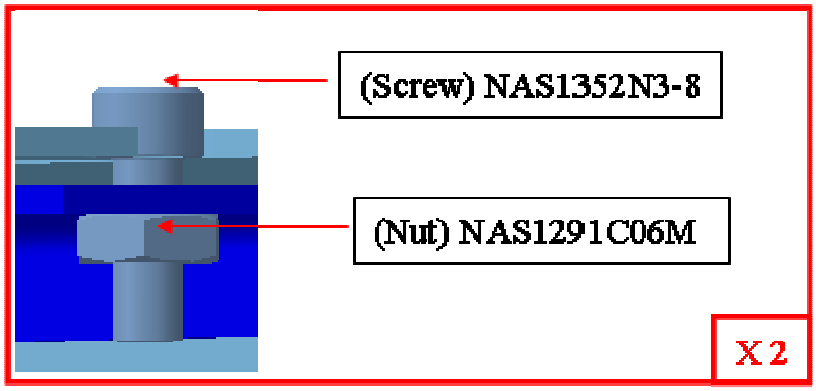


Figure 4: Connection of auxiliary tool to cover

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20. OPER SEQ. NO.	21. OPERATIONS (Print, Type, or Write Legibly)	VERIFICATION 22. TECH	23. QA/DV

19.6.4 Apply a thin layer of Grease, Braycote 601EF (C1), to the threads of each bolt prior the installation (as reported on the assembly drawings).

Braycote Grease - PN _____ Lot#_____ Exp. Date _____

19.7 Install the fasteners as per figure 4 and record fasteners lot number (write by hand)

Bolt/washer/nut and number NAS number LOT

_____ _____ LOT#_____

_____ _____ LOT#_____

_____ _____ LOT#_____

_____ _____ LOT#_____

_____ _____ LOT#_____

_____ _____ LOT#_____

_____ _____ LOT#_____

_____ _____ LOT#_____

_____ _____ LOT#_____

19.8 Torque the fasteners installed in the former step to the following torque value. Seating torque values are shown in below table.

Dash Number	Torque (in*lbf)	
	Max	Min
Screw NAS1352N06-6	13.861	11.782

19.9 Check this value with the table at the end of this ATS.
As this is a temporary screw and a nut without locking feature.
The Locking torque shall be approx **0-5 inch*lbf (size 0.138).**

19.10 Final torque shall be the seating torque ABOVE LOCKING TORQUE.
5% precision on torque.

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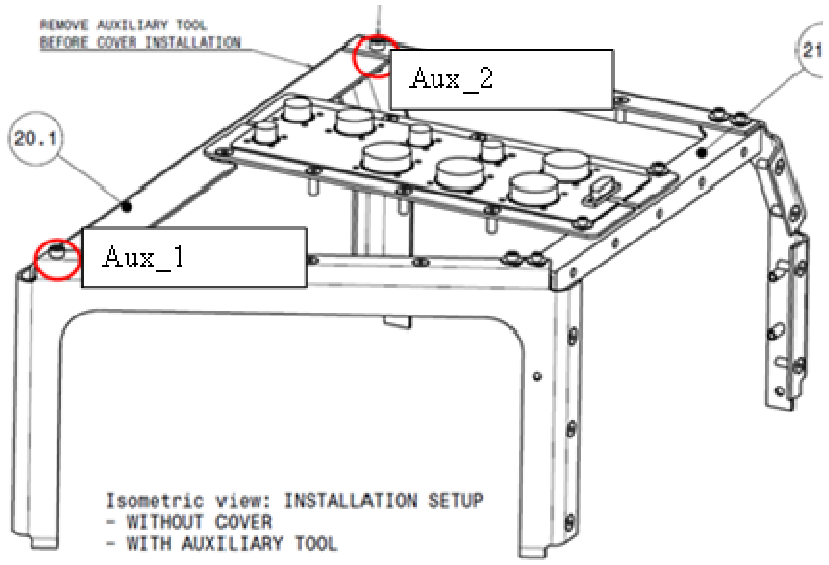
20. OPER SEQ. NO.	21. OPERATIONS (Print, Type, or Write Legibly)	VERIFICATION 22. TECH	VERIFICATION 23. QA/DV

Torque Wrench- Locking Torque (locking is the same as running torque)

PN _____ M# _____ Cal Due Date_____

Torque Wrench- Final Torque

PN _____ M# _____ Cal Due Date_____



Bolt indication (see figure above)	**Locking Torque**	**Final Torque**
_____	_____	_____
_____	_____	_____
_____	_____	_____
_____	_____	_____

19.11 **End of online operation auxiliary tool to cover**

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20. OPER SEQ. NO.	21. OPERATIONS (Print, Type, or Write Legibly)	VERIFICATION 22. TECH	VERIFICATION 23. QA/DV

20. INSTALLATION OF **Cover to Base plate inserts**

20.1 Prepare the Cover for installation. Perform a visual inspection of the parts to be installed; clean the parts to be installed with Isopropyl Alcohol and let the parts to be installed dry on the clean towel

20.2 Prepare screws and washer to be used for the part installation. Perform a screws and washer visual inspection; clean screws and washers in an Isopropyl Alcohol bath and let screws and washers dry on a clean towel

20.3 Perform a visual inspection of the base plate check the cleanliness of all the inserts to be used. If necessary clean them with Isopropyl Alcohol

20.4 Weight all the hardware to be installed, including fasteners. Record the weight

ITEM	WEIGHT

SCALE

20.5 PN _____ M# _____ Cal Date_____

20.6 WARNING: TTCB installation reference drawings are as indicated at the start of this ATS.
Verify before use the availability of the approved drawing revision

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20. OPER SEQ. NO.	21. OPERATIONS (Print, Type, or Write Legibly)	VERIFICATION 22. TECH	23. QA/DV

20.6.1 Check the bill of material in the assembly drawing.

20.6.2 Only when indicated in drawing apply a thin layer of Koropron primer in between washers and base plate and or component.

Koropron primer - PN _____ Lot#_____ Exp. Date _____

20.6.3 Install the indicated components as shown in the figure below.

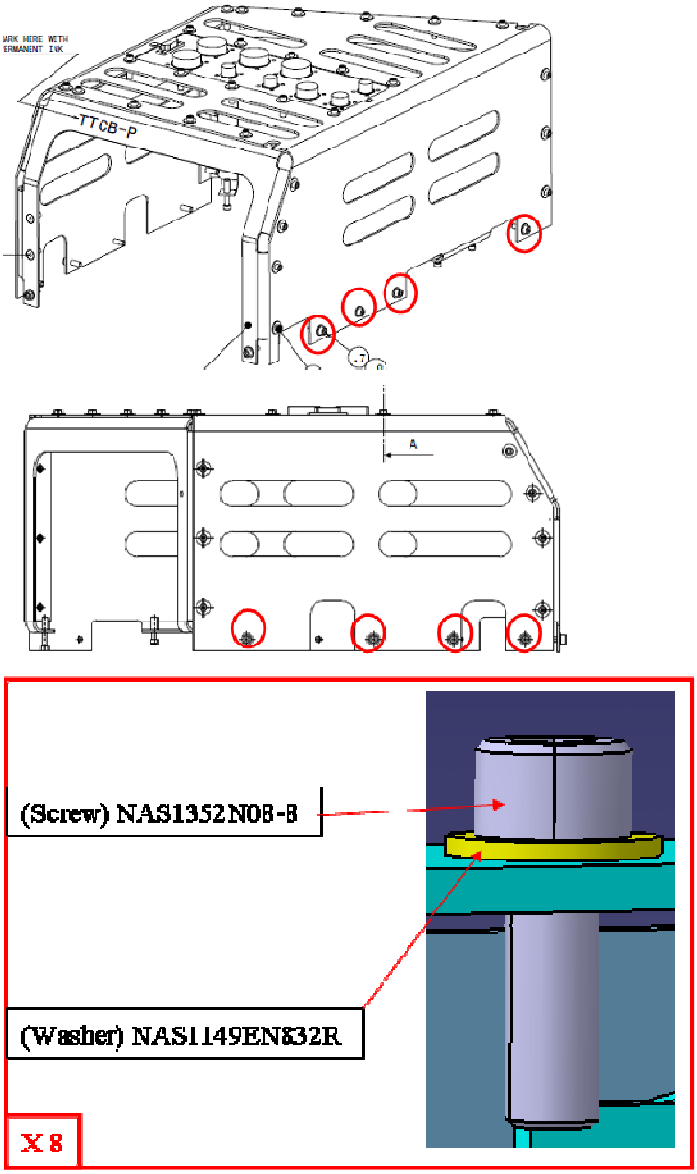

Figure 4: Connection of cover to base plate inserts

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20. OPER SEQ. NO.	21. OPERATIONS (Print, Type, or Write Legibly)	VERIFICATION 22. TECH	23. QA/DV

20.6.4 Apply a thin layer of Grease, Braycote 601EF (C1), to the threads of each bolt prior the installation (as reported on the assembly drawings).

Braycote Grease - PN _____ Lot#_____ Exp. Date _____

20.7 Install the fasteners as per figure 4 and record fasteners lot number (write by hand)

Bolt/washer/nut and number NAS number LOT

_____ _____ LOT#_____

_____ _____ LOT#_____

_____ _____ LOT#_____

_____ _____ LOT#_____

_____ _____ LOT#_____

_____ _____ LOT#_____

_____ _____ LOT#_____

_____ _____ LOT#_____

_____ _____ LOT#_____

20.8 Torque the fasteners installed in the former step to the final torque value. Seating torque values are shown in below table.

Dash Number	Torque (in*lbf)	
Screw	Max	Min
NAS1352N08-8	24.944	21.203

20.9 Check this value with the table at the end of this ATS.

Locking torque shall be in between **1.5-15 inch*lbf (size 0.164)**.

20.10 Check this value with Table 1 at the start of this ATS.
Final torque shall be the seating torque ABOVE LOCKING TORQUE.
5% precision on torque.

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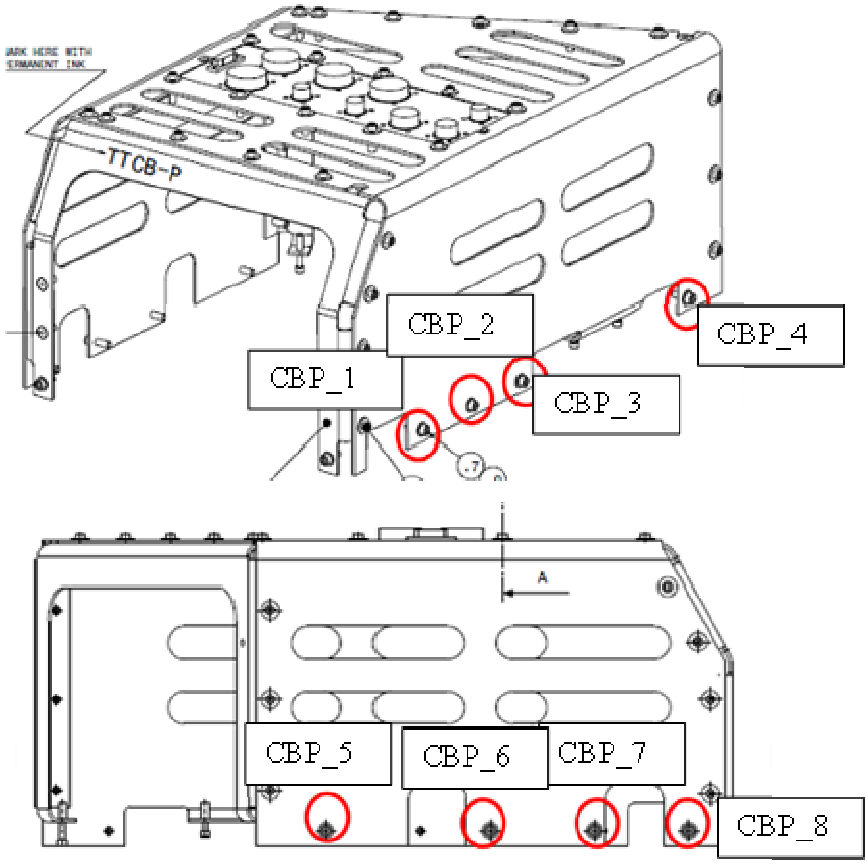
20. OPER SEQ. NO.	21. OPERATIONS (Print, Type, or Write Legibly)	VERIFICATION 22. TECH	23. QA/DV



Torque Wrench- Locking Torque (locking is the same as running torque)

PN _____ M# _____ Cal Due Date_____

Torque Wrench- Final Torque

PN _____ M# _____ Cal Due Date_____

Bolt indication (see figure above)	**Locking Torque**	**Final Torque**
_____	_____	_____
_____	_____	_____
_____	_____	_____

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20. OPER SEQ. NO.	21. OPERATIONS (Print, Type, or Write Legibly)	VERIFICATION 22. TECH	23. QA/DV
	Bolt indication (see figure above) **Locking Torque** **Final Torque**		
	____________ ____________ ____________		
	____________ ____________ ____________		
	____________ ____________ ____________		
	____________ ____________ ____________		
	____________ ____________ ____________		
	____________ ____________ ____________		
	____________ ____________ ____________		
	____________ ____________ ____________		
	____________ ____________ ____________		
	____________ ____________ ____________		
20.11	End of online operation cover to base plate inserts installation		

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20. OPER SEQ. NO.	21. OPERATIONS (Print, Type, or Write Legibly)	VERIFICATION 22. TECH	VERIFICATION 23. QA/DV

21. INSTALLATION OF **BASE PLATE TO USS SIMULATOR**

21.1 Prepare the BASE PLATE for installation. Perform a visual inspection of the parts to be installed; clean the parts to be installed with Isopropyl Alcohol and let the parts to be installed dry on the clean towel

21.2 Prepare screws and washer to be used for the part installation. Perform a screws and washer visual inspection; clean screws and washers in an Isopropyl Alcohol bath and let screws and washers dry on a clean towel

21.3 Perform a visual inspection of the USS SIMULATOR check the cleanliness of all the inserts to be used. If necessary clean them with Isopropyl Alcohol

21.4 Weight all the hardware to be installed, including fasteners. Record the weight

ITEM	WEIGHT

SCALE

21.5 PN _____ M# _____ Cal Date_____

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20. OPER SEQ. NO.	21. OPERATIONS (Print, Type, or Write Legibly)	VERIFICATION 22. TECH	23. QA/DV

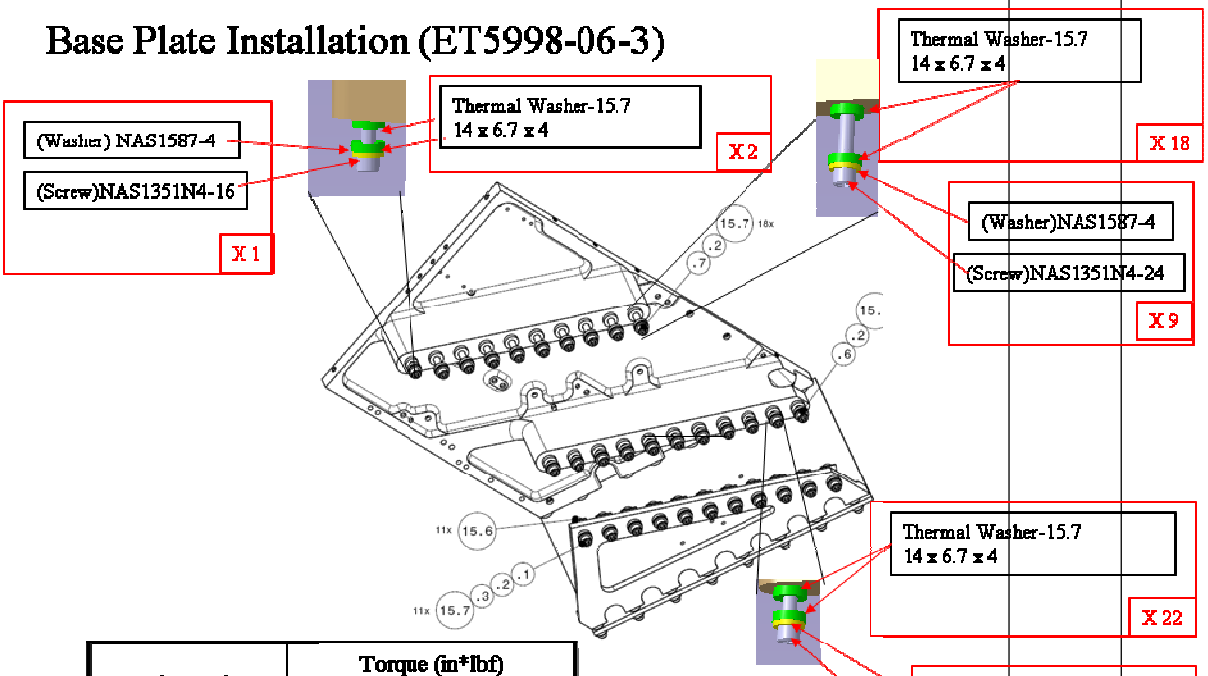
21.6 WARNING: TTCB installation reference drawings are as indicated at the start of this ATS.
Verify before use the availability of the approved drawing revision

21.6.1 Check the bill of material in the assembly drawing.

21.6.2 Only when indicated in drawing apply a thin layer of Koropron primer in between washers and base plate and or component.

Koropron primer - PN _____ Lot#_____ Exp. Date _____

21.6.3 Install the indicated components as shown in the figure below.



Dash Number	Torque (in*lbf)	
	Max	Min
NAS1351N4-16	102.375	87.019
NAS1351N4-24	102.375	87.019
NAS1351N4-20	102.375	87.019

Figure 4: Connection base plate to USS simulator

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20. OPER SEQ. NO.	21. OPERATIONS (Print, Type, or Write Legibly)	VERIFICATION 22. TECH	23. QA/DV

21.6.4 Apply a thin layer of Grease, Braycote 601EF (C1), to the threads of each bolt prior the installation (as reported on the assembly drawings).

Braycote Grease - PN _____ Lot#_____ Exp. Date _____

21.7 Install the fasteners as per figure 4 and record fasteners lot number (write by hand)

USE INSTALLATION BOLTS NOT FLIGHT BOLTS AT AIDC

Bolt/washer/nut and number NAS number LOT

_____ _____ LOT#_____

_____ _____ LOT#_____

_____ _____ LOT#_____

_____ _____ LOT#_____

_____ _____ LOT#_____

_____ _____ LOT#_____

_____ _____ LOT#_____

_____ _____ LOT#_____

_____ _____ LOT#_____

21.8 Torque the fasteners installed in the former step to the final torque value. Seating torque values are shown in below table.

Dash Number	Torque (in*lbf)	
	Max	Min
NAS1351N4-16	102.375	87.019
NAS1351N4-24	102.375	87.019
NAS1351N4-20	102.375	87.019

21.9 Check this value with the table at the end of this ATS.

Locking torque shall be in between **3.5-30 inch*lbf (size 0.250)**.

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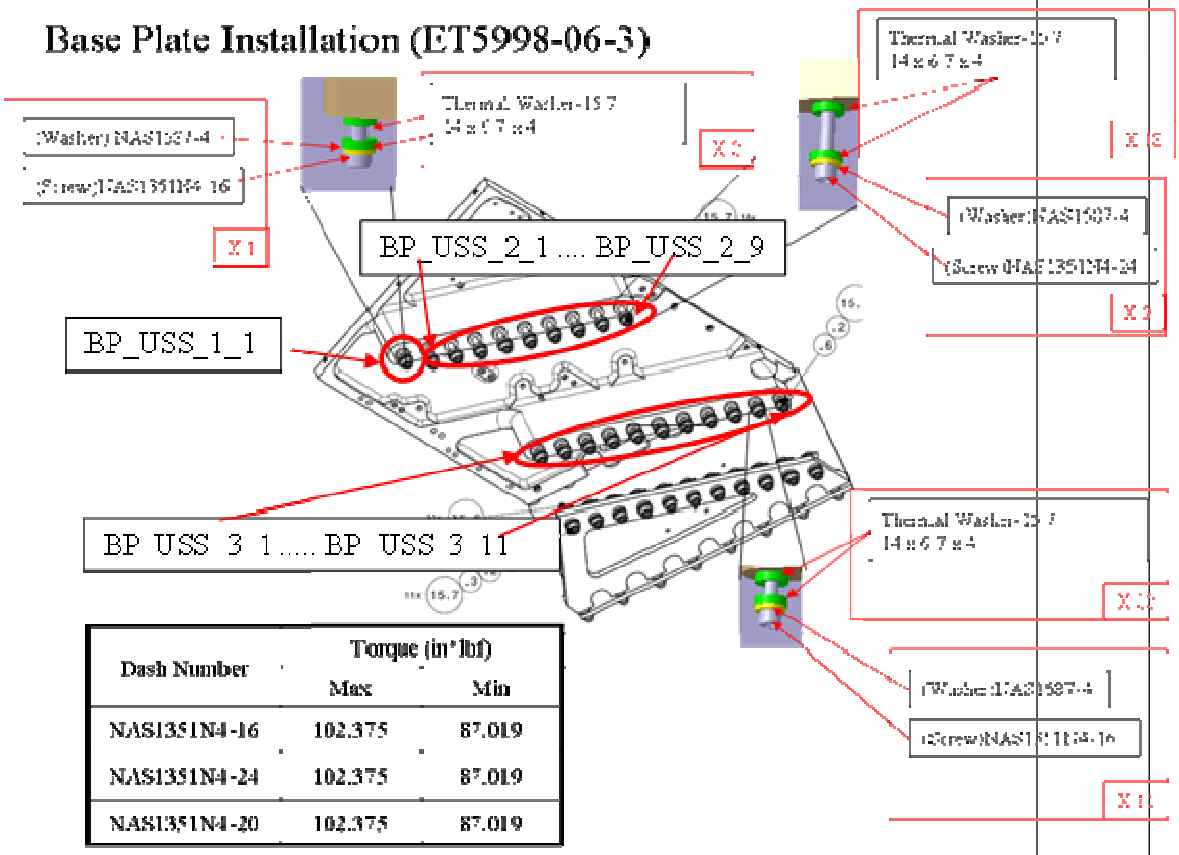
20. OPER SEQ. NO.	21. OPERATIONS (Print, Type, or Write Legibly)	VERIFICATION 22. TECH	23. QA/DV
21.10	Check this value with Table 1 at the start of this ATS. Final torque shall be the seating torque ABOVE LOCKING TORQUE. 5% precision on torque.		



Dash Number	Torque (in*lbf) Max	Min
NAS1351N4-16	102.375	87.019
NAS1351N4-24	102.375	87.019
NAS1351N4-20	102.375	87.019

Torque Wrench- Locking Torque (locking is the same as running torque)

PN _____ M# _____ Cal Due Date_____

Torque Wrench- Final Torque

PN _____ M# _____ Cal Due Date_____

Bolt indication (see figure above)	**Locking Torque**	**Final Torque**
_____	_____	_____
_____	_____	_____
_____	_____	_____

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20. OPER SEQ. NO.	21. OPERATIONS (Print, Type, or Write Legibly)	VERIFICATION 22. TECH	23. QA/DV
	Bolt indication (see figure above) **Locking Torque** **Final Torque**		
	__________ __________ __________		
	__________ __________ __________		
	__________ __________ __________		
	__________ __________ __________		
	__________ __________ __________		
	__________ __________ __________		
	__________ __________ __________		
	__________ __________ __________		
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	__________ __________ __________		
	__________ __________ __________		
	__________ __________ __________		
	__________ __________ __________		
	__________ __________ __________		
	__________ __________ __________		
	__________ __________ __________		
21.11	End of online operation base plate to USS		

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20. OPER SEQ. NO.	21. OPERATIONS (Print, Type, or Write Legibly)	VERIFICATION 22. TECH	VERIFICATION 23. QA/DV

22. INSTALLATION OF **SIDE PLATE TO USS SIMULATOR**

22.1 Prepare the SIDE PLATE for installation. Perform a visual inspection of the parts to be installed; clean the parts to be installed with Isopropyl Alcohol and let the parts to be installed dry on the clean towel

22.2 Prepare screws and washer to be used for the part installation. Perform a screws and washer visual inspection; clean screws and washers in an Isopropyl Alcohol bath and let screws and washers dry on a clean towel

22.3 Perform a visual inspection of the USS SIMULATOR check the cleanliness of all the inserts to be used. If necessary clean them with Isopropyl Alcohol

22.4 Weight all the hardware to be installed, including fasteners. Record the weight

ITEM	WEIGHT

SCALE

22.5 PN _____ M# _____ Cal Date_____

22.6 WARNING: TTCB installation reference drawings are as indicated at the start of this ATS.
Verify before use the availability of the approved drawing revision

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20. OPER SEQ. NO.	21. OPERATIONS (Print, Type, or Write Legibly)	VERIFICATION 22. TECH	23. QA/DV

22.6.1 Check the bill of material in the assembly drawing.

22.6.2 Only when indicated in drawing apply a thin layer of Koropron primer in between washers and base plate and or component.

Koropron primer - PN _____ Lot#_____ Exp. Date _____

22.6.3 Install the indicated components as shown in the figure below.

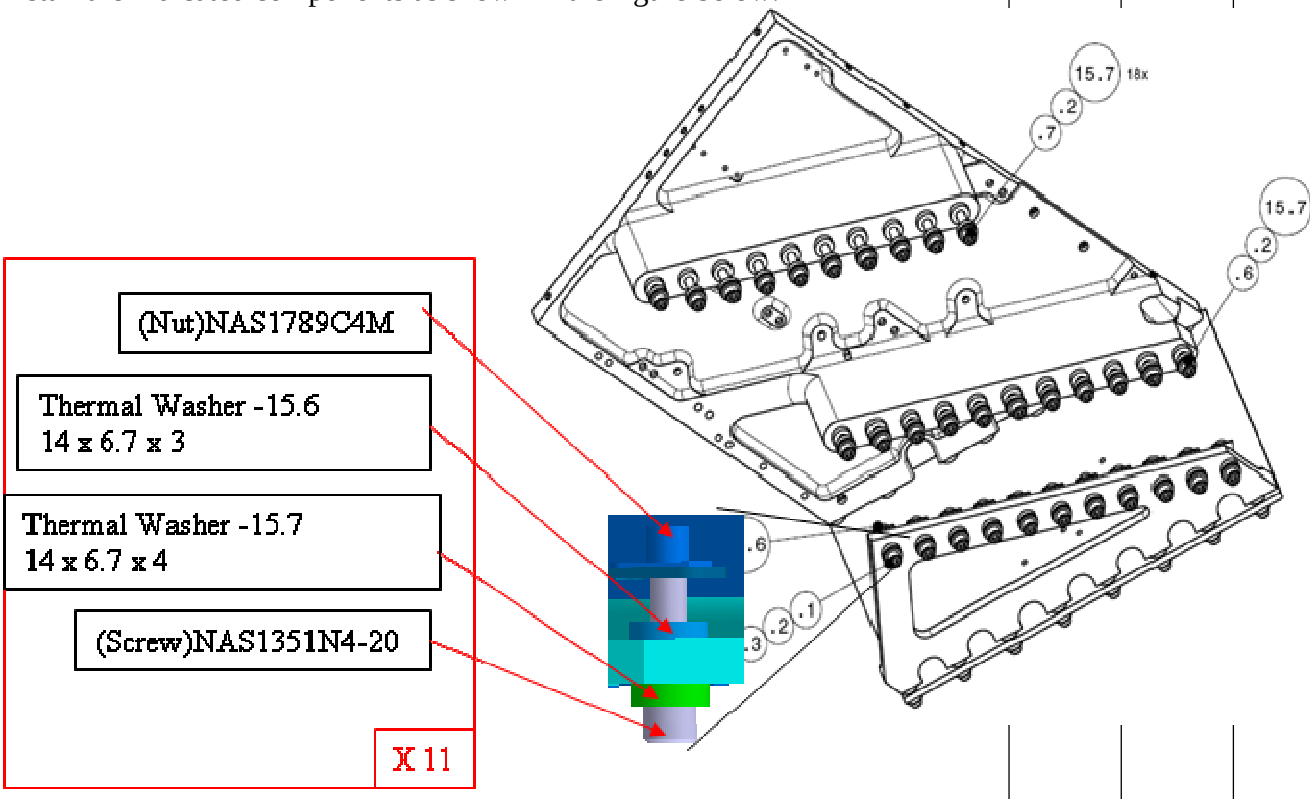

Figure 4: Connection side plate to USS simulator

22.6.4 Apply a thin layer of Grease, Braycote 601EF (C1), to the threads of each bolt prior the installation (as reported on the assembly drawings).

Braycote Grease - PN _____ Lot#_____ Exp. Date _____

AMS-02 TASK SHEET (ATS)
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4. ATS NO. ATS 090127-1-R0

6. MOD NO.

20. OPER SEQ. NO.	21. OPERATIONS (Print, Type, or Write Legibly)	VERIFICATION 22. TECH	23. QA/DV

22.7 Install the fasteners as per figure 4 and record fasteners lot number (write by hand)

USE INSTALLATION BOLTS NOT FLIGHT BOLTS AT AIDC

Bolt/washer/nut and number NAS number LOT

_____ _____ LOT#_____

_____ _____ LOT#_____

_____ _____ LOT#_____

_____ _____ LOT#_____

_____ _____ LOT#_____

_____ _____ LOT#_____

_____ _____ LOT#_____

_____ _____ LOT#_____

_____ _____ LOT#_____

22.8 Torque the fasteners installed in the former step to the final torque value. Seating torque values are shown in below table.

Dash Number	Torque (in*lbf)	
	Max	Min
NAS1351N4-20	102.375	87.019

22.9 Check this value with the table at the end of this ATS.

Locking torque shall be in between **3.5-30 inch*lbf (size 0.250)**.

22.10 Check this value with Table 1 at the start of this ATS.
Final torque shall be the seating torque ABOVE LOCKING TORQUE.

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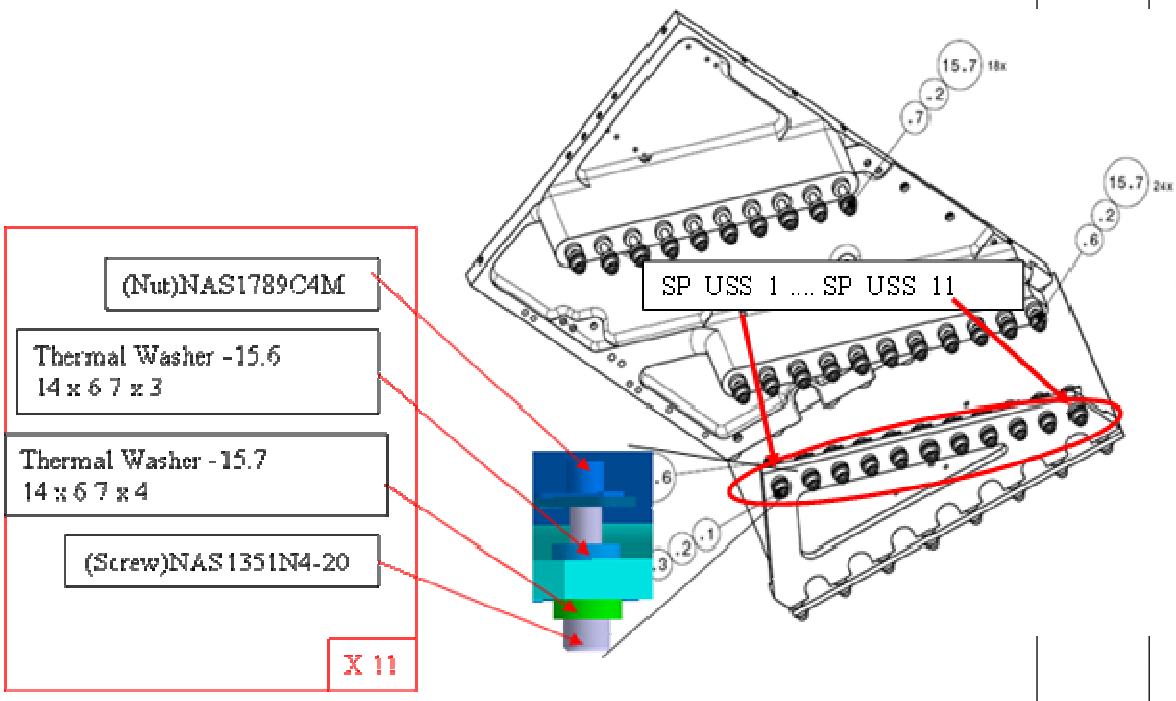
20. OPER SEQ. NO.	21. OPERATIONS (Print, Type, or Write Legibly)	VERIFICATION 22. TECH	23. QA/DV

5% precision on torque.



Torque Wrench- Locking Torque (locking is the same as running torque)

PN _____ M# _____ Cal Due Date_____

Torque Wrench- Final Torque

PN _____ M# _____ Cal Due Date_____

Bolt indication (see figure above)	**Locking Torque**	**Final Torque**
_____	_____	_____
_____	_____	_____
_____	_____	_____
_____	_____	_____
_____	_____	_____

AMS-02 TASK SHEET (ATS) CONTINUATION PAGE	4. ATS NO.	ATS 090127-1-R0
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20. OPER SEQ. NO.	21. OPERATIONS (Print, Type, or Write Legibly)	VERIFICATION 22. TECH	VERIFICATION 23. QA/DV

Bolt indication (see figure above) **Locking Torque** **Final Torque**

_____	_____	_____
_____	_____	_____
_____	_____	_____
_____	_____	_____
_____	_____	_____
_____	_____	_____
_____	_____	_____
_____	_____	_____
_____	_____	_____
_____	_____	_____
_____	_____	_____

End of online operation side plate to USS

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20. OPER SEQ. NO.	21. OPERATIONS (Print, Type, or Write Legibly)	VERIFICATION 22. TECH	VERIFICATION 23. QA/DV

23. INSTALLATION OF **DUMMY START-UP RADIATOR TO USS SIMULATOR**

23.1 Prepare the DUMMY START-UP RADIATOR PLATE for installation. Perform a visual inspection of the parts to be installed; clean the parts to be installed with Isopropyl Alcohol and let the parts to be installed dry on the clean towel

23.2 Prepare screws and washer to be used for the part installation. Perform a screws and washer visual inspection; clean screws and washers in an Isopropyl Alcohol bath and let screws and washers dry on a clean towel

23.3 Perform a visual inspection of the BASE PLATE AND SIDE PLATE INSERTS check the cleanliness of all the inserts to be used. If necessary clean them with Isopropyl Alcohol

23.4 Weight all the hardware to be installed, including fasteners. Record the weight

ITEM	WEIGHT

SCALE

23.5 PN _____ M# _____ Cal Date_____

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20. OPER SEQ. NO.	21. OPERATIONS (Print, Type, or Write Legibly)	VERIFICATION 22. TECH	VERIFICATION 23. QA/DV

23.6 WARNING: TTCB installation reference drawings are as indicated at the start of this ATS. Verify before use the availability of the approved drawing revision

23.6.1 Check the bill of material in the assembly drawing.

23.6.2 Only when indicated in drawing apply a thin layer of Koropron primer in between washers and base plate and or component.

Koropron primer - PN _____ Lot#_____ Exp. Date _____

23.6.3 Install the indicated components as shown in the figure below.

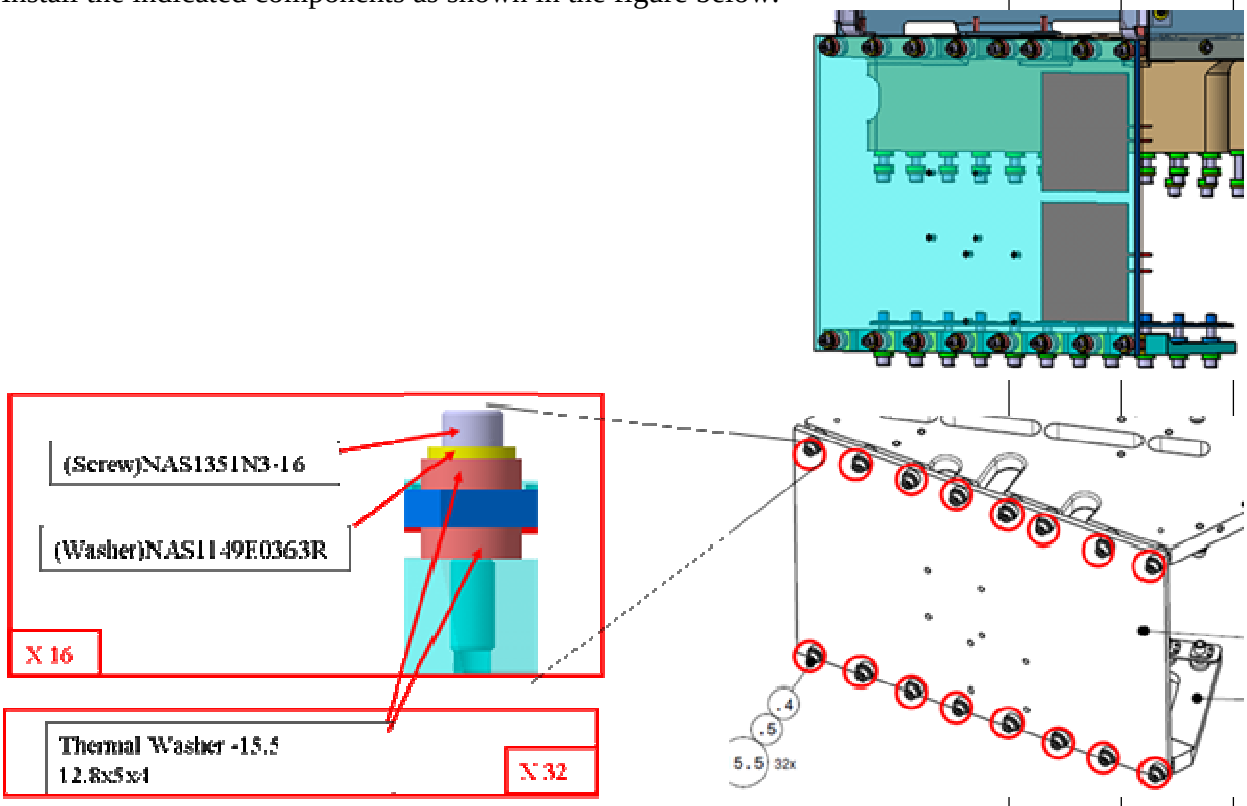

Figure 4: Connection radiator plate to base plate and side plate inserts

TAKE NOTICE THE DUMMY RADIATOR IS NOT SHOWN IN THIS PICTURE. USE HOWEVER THE SAME BOLT NUMBERING

23.6.4 Apply a thin layer of Grease, Braycote 601EF (C1), to the threads of each bolt prior the installation (as reported on the assembly drawings).

Braycote Grease - PN _____ Lot#_____ Exp. Date _____

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20. OPER SEQ. NO.	21. OPERATIONS (Print, Type, or Write Legibly)	VERIFICATION 22. TECH	23. QA/DV

23.7 Install the fasteners as per figure 4 and record fasteners lot number (write by hand)

USE INSTALLATION BOLTS NOT FLIGHT BOLTS AT AIDC

Bolt/washer/nut and number NAS number LOT

_____ _____ LOT#_____

_____ _____ LOT#_____

_____ _____ LOT#_____

_____ _____ LOT#_____

_____ _____ LOT#_____

_____ _____ LOT#_____

_____ _____ LOT#_____

_____ _____ LOT#_____

_____ _____ LOT#_____

23.8 Torque the fasteners installed in the former step to the final torque value. Seating torque values are shown in below table.

Dash Number	Torque (in*lbf)	
	Max	Min
Screw NAS1351N3-16	42.237	35.901

23.9 Check this value with the table at the end of this ATS.

Locking torque shall be in between **2.0-18 inch*lbf (size 0.190)**.

23.10 Check this value with Table 1 at the start of this ATS.
Final torque shall be the seating torque ABOVE LOCKING TORQUE.

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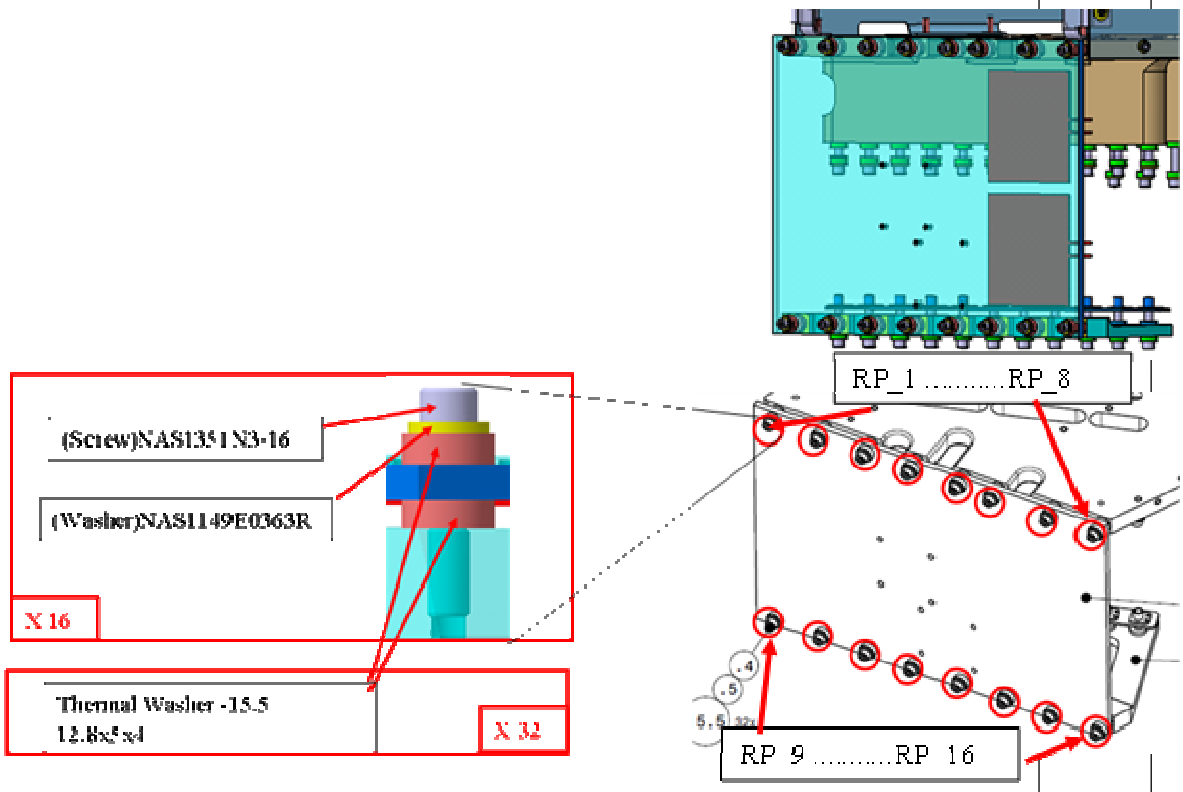
20. OPER SEQ. NO.	21. OPERATIONS (Print, Type, or Write Legibly)	VERIFICATION 22. TECH	23. QA/DV

5% precision on torque.



Torque Wrench- Locking Torque (locking is the same as running torque)

PN _____ M# _____ Cal Due Date_____

Torque Wrench- Final Torque

PN _____ M# _____ Cal Due Date_____

Bolt indication (see figure above)	**Locking Torque**	**Final Torque**
_____	_____	_____
_____	_____	_____
_____	_____	_____
_____	_____	_____
_____	_____	_____

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20. OPER SEQ. NO.	21. OPERATIONS (Print, Type, or Write Legibly)	VERIFICATION	
		22. TECH	23. QA/DV

Bolt indication (see figure above) **Locking Torque** **Final Torque**

_____	_____	_____
_____	_____	_____
_____	_____	_____
_____	_____	_____
_____	_____	_____
_____	_____	_____
_____	_____	_____
_____	_____	_____
_____	_____	_____
_____	_____	_____
_____	_____	_____
_____	_____	_____

End of online operation dummy radiator plate installation

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20. OPER SEQ. NO.	21. OPERATIONS (Print, Type, or Write Legibly)	VERIFICATION 22. TECH	VERIFICATION 23. QA/DV

24. INSTALLATION OF **Cover to Base plate**

24.1 Prepare the Cover for installation. Perform a visual inspection of the parts to be installed; clean the parts to be installed with Isopropyl Alcohol and let the parts to be installed dry on the clean towel

24.2 Prepare screws and washer to be used for the part installation. Perform a screws and washer visual inspection; clean screws and washers in an Isopropyl Alcohol bath and let screws and washers dry on a clean towel

24.3 Perform a visual inspection of the COVER check the cleanliness of all the RIVNUTS. If necessary clean them with Isopropyl Alcohol

24.4 Weight all the hardware to be installed, including fasteners. Record the weight

ITEM	WEIGHT

SCALE

24.5 PN _____ M# _____ Cal Date_____

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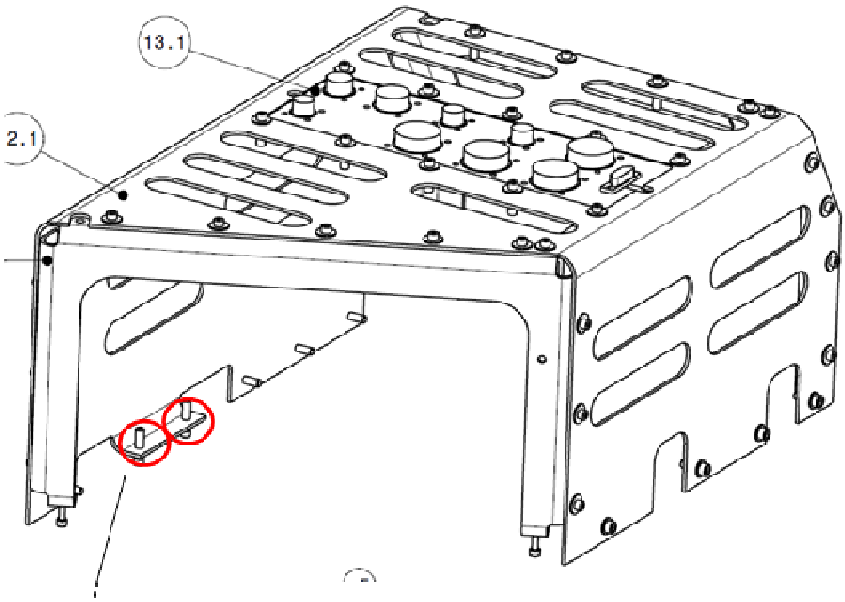
20. OPER SEQ. NO.	21. OPERATIONS (Print, Type, or Write Legibly)	VERIFICATION 22. TECH	VERIFICATION 23. QA/DV
24.6	WARNING: TTCB installation reference drawings are as indicated at the start of this ATS. Verify before use the availability of the approved drawing revision		
24.6.1	Check the bill of material in the assembly drawing.		
24.6.2	Only when indicated in drawing apply a thin layer of Koropron primer in between washers and base plate and or component. Koropron primer - PN _____ Lot#_____ Exp. Date _____		
24.6.3	Install the indicated components as shown in the figure below.		



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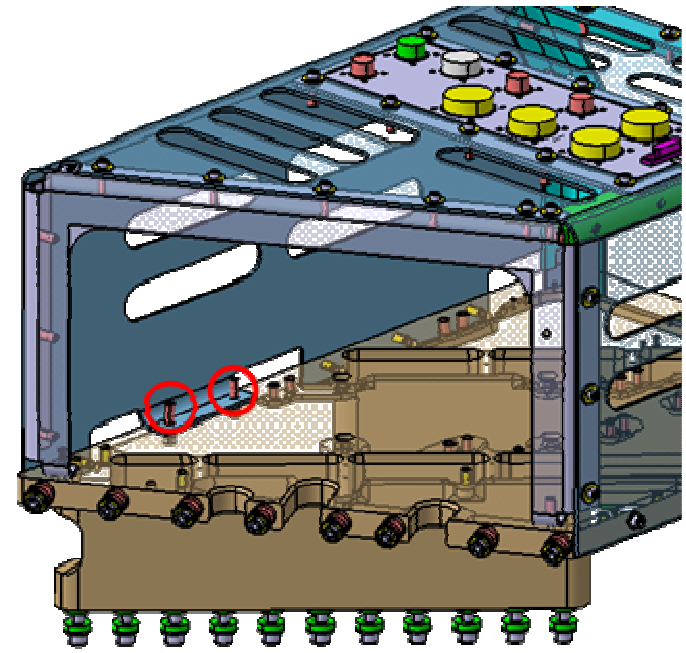

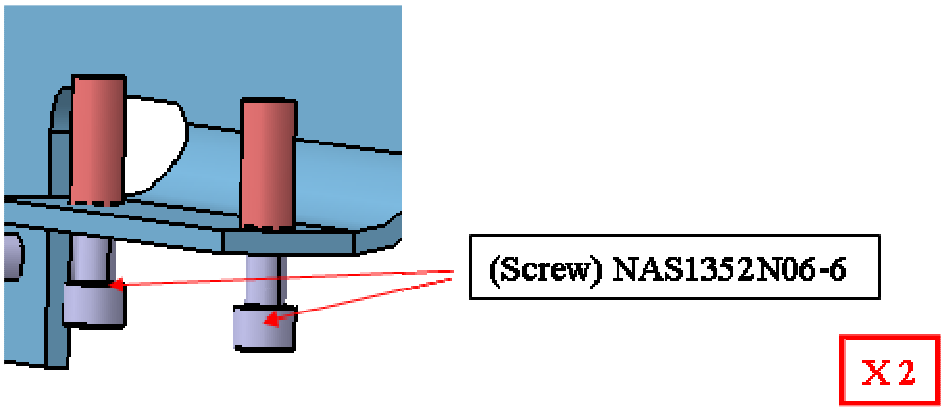

Figure 4: Connection of cover to base plate

24.6.4 Apply a thin layer of Grease, Braycote 601EF (C1), to the threads of each bolt prior the installation (as reported on the assembly drawings).

Braycote Grease - PN _____ Lot#_____ Exp. Date _____

24.7 Install the fasteners as per figure 4 and record fasteners lot number (write by hand)

Bolt/washer/nut and number NAS number LOT

_____ _____ LOT#_____

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20. OPER SEQ. NO.	21. OPERATIONS (Print, Type, or Write Legibly)	VERIFICATION 22. TECH	23. QA/DV

_____ _____ LOT#_____

_____ _____ LOT#_____

_____ _____ LOT#_____

_____ _____ LOT#_____

_____ _____ LOT#_____

_____ _____ LOT#_____

_____ _____ LOT#_____

_____ _____ LOT#_____

24.8 Torque the fasteners installed in the former step to the final torque value. Seating torque values are shown in below table.

Dash Number	Torque (in*lbf)	
	Max	Min
Screw NAS1352N06-6	13.861	11.782

24.9 Check this value with the table at the end of this ATS.

Locking torque shall be in between **1– 10 inch*lbf (size 0.138)**.

24.10 Check this value with Table 1 at the start of this ATS.
Final torque shall be the seating torque ABOVE LOCKING TORQUE.
5% precision on torque.

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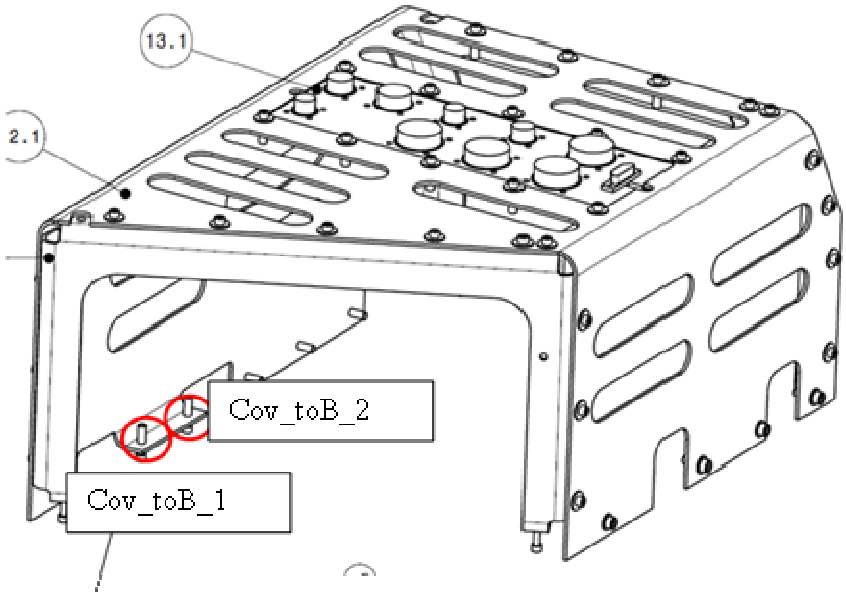
20. OPER SEQ. NO.	21. OPERATIONS (Print, Type, or Write Legibly)	VERIFICATION 22. TECH	VERIFICATION 23. QA/DV



Torque Wrench- Locking Torque (locking is the same as running torque)

PN _____ M# _____ Cal Due Date_____

Torque Wrench- Final Torque

PN _____ M# _____ Cal Due Date_____

Bolt indication (see figure above)	**Locking Torque**	**Final Torque**
_____	_____	_____
_____	_____	_____
_____	_____	_____
_____	_____	_____

24.11 **End of online operation cover to base plate rivnut**

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20. OPER SEQ. NO.	21. OPERATIONS (Print, Type, or Write Legibly)	VERIFICATION 22. TECH	23. QA/DV

25. Appendix 1: Seating Torque Values (2009_01_09)

Max and Min torque summary of TTCS Parts issue 20090109

Joints	Bolt		Insert/Nut		Washer		Torque(in*lbf)	
	Dash Number	Number	Dash Number	Number	Dash Number	Number	Max	Min
TRD_Brackets_TTCB_Shared	NAS1351N4-24	9	MS21209 F4-15	9	NAS1587-4	9	102.375	87.019
Base plate &USS	NAS1351N4-16	12	MS21209F4-15	12	NAS1587-4	12	102.375	87.019
Side plate &USS	NAS1351N4-20	11	NAS1789C4M	11	no	11	102.375	87.019
Start up radiator &base/sideplate	NAS1351N3-16	16	MS21209F1-25	16	NAS1149EO363R	16	42.237	35.901
cover &base	NAS1352N08-8	10	MS21209C0820	10	NAS1149EN832R	10	24.944	21.203
	NAS1352N06-6	2	NAS1330-06-106	2	no	0	13.861	11.782
Accumulator bracket &base plate	NAS1351N3-16	8	MS21209F1-15	8	NAS1149EO363R	8	42.237	35.901
Pump Bracket &start up radiator	NAS1352N06-10	8	NAS1291C06M	8	NAS1149EN532R	8	13.861	11.782
Aps/Dps &Base plate	NAS1352N08-14	8	MS21209C0820	8	NAS1149EN832R	8	24.944	21.203
HX& Base plate	NAS1351N3-16	8	MS21209 F1-15	8	NAS 620 10 LC	8	42.237	35.901
Cold orbit heater &base plate	NAS1352N08-10	4	MS21209C0820	4	NAS1149EN832R	4	24.944	21.203
Controller &base plate	NAS1351N3-10	6	MS124695 10-32X1.5dia	6	no	0	42.237	35.901
Cover&CoverRibs	NAS1352N06-6	25	NAS1330-06-106	25	NAS1149EN532R	25	13.861	11.782
Cover Rib&Baseplate	NAS1352N06-12	2	NAS1330-06-106	2	no	0	13.861	11.782
Preheater&Baseplate	NAS1352N04-LB-6	8	no	0	no	0	7.459	6.34
ConnectorsPlate&Cover	NAS1352N06-6	10	NAS1330-06-106	10	NAS1149EN532R	10	13.861	11.782
PressSensors&Cover	NAS1352N06-8	8	MS21209C0620	8	no	0	13.861	11.782
PipeClamp&BasePlate	NAS1352N08-8	4	MS21209C0820	4	no	0	24.944	21.203
PipeClamp&PipeClamp	NAS1352N06-6	8	MS21209C0610	8	no	0	13.861	11.782
ClampBracker&Collar	NAS1351N08-LB14	7	no	0	NAS1149EN832R	7	26.863	22.834
Pipe-Fix&Clamp	NAS1351N06-10	8	MS21209F0625	8	NAS1149EN532R	8	15.662	13.312
Press&Saddle	NAS1351N08-12	8	MS21209F0820	8	NAS1149EN832R	8	26.863	22.834
Pipe clamp and cover	NAS1352N06-12	2	NAS1330-06-106	2	no	0	13.861	11.782